Service Manual

MODEL 6330 MODULATOR

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SECTION 1
GENERAL INFORMATION

1.1 SCOPE AND PURPOSE OF MANUAL

This manual describes Scientific-Atlanta's Modulator Model 6330 (figure 1-1). The contents of this manual are divided into eight sections. This section gives an overview of the 6330, its purpose, features, specifications, physical and functional description and available options. Section 2 describes unpacking and installation procedures. Section 3 covers operation. Section 4 gives the theory of operation. Section 5 covers maintenance and troubleshooting. Section 6 describes the alignment of the unit. Section 7 contains the parts lists and section 8 contains all of the important drawings.

Figure 1-1. Model 6330 Modulator Shown with Optional Rack Adapter and Rack Slides

Throughout this manual, all abbreviations and letter symbols conform to one or more of the following ANSI (American National Standards Institute) standards:

- ANSI Y 1.1 - Abbreviations for use on drawings and in text
- ANSI Y10.3 - Letter Symbols for Quantities used in Mechanics of Solids
- ANSI Y10.5 - Letter Symbols for Quantities used in Electrical Science and Electrical Engineering
- ANSI Y10.20 - Mathematical Signs and Symbols
- ANSI/IEE Standard 260 - Letter Symbols for Units of Measurement

In addition, all drawings conform to one or more of the following ANSI standards:

- ANSI Y32.2 - Graphic Symbols for Electrical and Electronics Diagrams
- ANSI Y32.14 - Graphic Symbols for Logic Diagrams
- ANSI Y32.21 - Graphic Symbols for Grid and Mapping Diagrams Used in Cable Television Systems
- ANSI Y32.16 - Reference Designations for Electrical and Electronics Parts and Equipment

1.2 PURPOSE AND APPLICATION

The 6330 provides the interface in Mini-Cable Systems or CATV (Cable Television) networks to produce a high quality composite IF (intermediate frequency) television signal from baseband audio and video signals, and then convert this composite IF signal to the desired channel frequency for distribution over your cable network. The 6330 can be used for application in simple Mini-Cable Systems, such as hotel, motel, apartment complex cable systems, educational systems, or complex CATV systems. Its functional location is between the receiver's output and the combiner's input. A separate 6330 is needed for each satellite channel to be received and distributed over the cable network.

1.3 FEATURES AND SPECIFICATIONS

The 6330 combines excellent performance and cost effectiveness for all closed-circuit television applications. The main features of the 6330 are listed below, and its technical specifications are listed in table 1-1.

- Cable quality modulator
- Compact package may stand alone or be rack mounted
- SAW filter vestigial filtering standard
- Composite IF loop-through (SIFL) standard
- FCC pre-distortion group delay standard
- For use in CATV, MATV, and ETV systems
- vhf, midband, and superband channels available
- Crystal controlled frequency accuracy
- Output power: +50 to +60 dBmV
- Spurious output: -60 dB (relative to video carrier at +60 dBmV)
- Front panel monitor/test point standard
- Front panel output level control standard
- Video, audio and power status monitoring standard
- Video percent of modulation, audio deviation and level adjustments through top cover.

Table 1-1. 6330 Technical Specifications

Parameter	Specification
GENERAL	
Input voltage	105 to 125 V ac, 60 Hz
Input power	30 watts maximum
Weight	5.5 lb
Dimensions	5" H x 4" W x 12-1/4" D

Table 1-1. 6330 Technical Specifications - continued

Parameter	Specification
Operating temperature range	0° to +50°C (+32°F to 120°F)
Options	Dual IF loop-through, DIFLA and DIFLB with video IF from before, or after the SAW vestigial sideband filter respectively
	Spectrum Inversion
	Rack adapter and rack slides
VIDEO INPUT	
Input type	Baseband video, negative sync
Input level	0.5 V p-p minimum for 87.5% depth of modulation (Factory set for 87.5% with 1 V p-p input signal)
Input impedance	75 ohm, unbalanced (return loss 26 dB minimum)
Frequency response	±1 dB from 30 Hz to 4.2 MHz
Differential gain	≤5% at 87.5% modulation
Differential phase	≤1° at 87.5% modulation
Hum and noise	60 dB down with respect to 90% modulation
Tilt	2% maximum on 60 Hz, 50% square wave
Video IF output level	+43 dBmV ±2 dB
AUDIO INPUT	
Input level	-10 to +10 dBm (Factory set with 0 dBm 10 kHz signal for 25 kHz peak deviation)
Input impedance	600 ohm balanced
Frequency response	±1.0 dB from 30 Hz to 15 kHz
Carrier shift with modulation	±100 Hz or less
Harmonic distortion	1% maximum 30 Hz to 15 kHz at 25 kHz deviation
FM hum and noise	60 dB down with respect to 25 kHz deviation
Audio IF output level	Adjustable (Factory set at 15 dB below video level)

Table 1-1. 6330 Technical Specifications - continued

Parameter	Specification
RF OUTPUT	
Channels available	Any of 35 standard vhf, mid-band, or super-band channels (channels 2-6, 7-13, and A-W). Transposed video-audio channels available with optional spectrum inverter
Output impedance	75 ohm unbalanced (VSWR 1.35:1 minimum), within 6 MHz desired channel
Output level	+50 dBmV to +60 dBmV continuously variable
Spurious outputs	60 dB below video carrier with video carrier at +60 dBmV and sound carrier at +45 dBmV
Frequency tolerance stability	±8 kHz vhf; mid-band ±10 kHz super-band
Group delay response	Meets FCC predistortion requirements for color transmission
Intercarrier frequency	4.5 MHz ±500 Hz
Vestigial sideband response	-20 dB at channel edge; -40 at adjacent picture and sound carrier frequencies and all frequencies farther removed from channel

1.4 PHYSICAL DESCRIPTION

The small size of the 6330 allows up to four units to be mounted side-by-side in a standard 19-inch rack. An outline drawing of a single 6330 is shown in figure 1-2. The 6330 consists of three major assemblies: IF modulator board A1, output converter board A2, and the chassis subassembly. Power transformer T1 and voltage regulator VR1 are mounted to the chassis for improved heat dissipation. These items are identified in figure 1-3. Front and rear panel and top-cover controls, indicators, and connectors are identified in figure 3-1 and described in table 3-1.

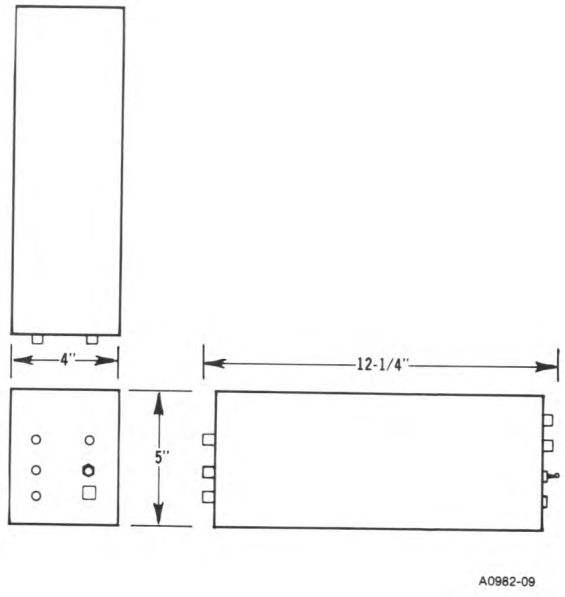


Figure 1-2. Outline Drawing of a Single 6330

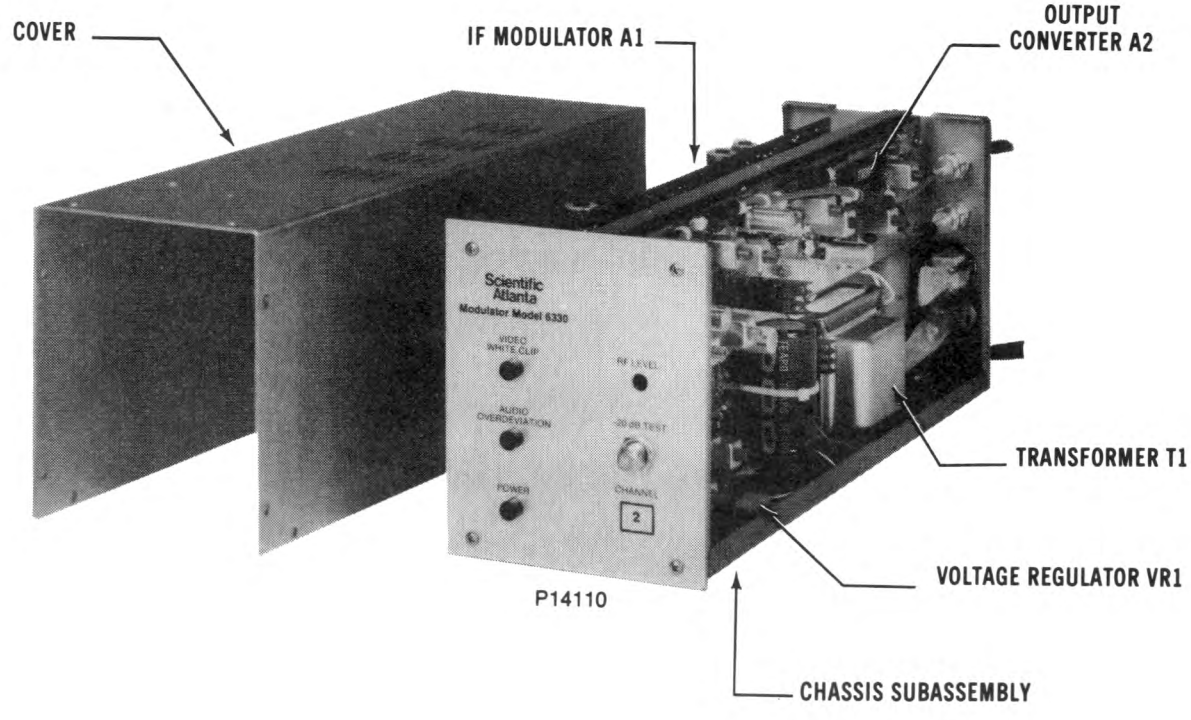


Figure 1-3. Major Assemblies of the 6330

1.5 FUNCTIONAL DESCRIPTION

1.5.1 Introduction

The 6330 processes baseband video and audio signals to produce an output rf signal at a specific CATV channel frequency. The following discussion is based on the overall schematic diagram of the 6330 shown in figure 1-4. The material is presented in three parts: power distribution, IF modulator board A1, and output converter board A2.

1.5.2 Power Distribution

Input ac power is supplied to the 6330 through a 3-wire power cord coming out of the rear panel. The unit is protected against overloads by fuse F1 in one side of the line. Power to the unit is controlled by ON/OFF switch S1, which breaks both input lines. Both the switch and fuse are mounted on the 6330's rear panel. (Switch S1 is not available on U.L. approved units.)

When switch S1 is set to the ON position, ac line voltage is applied to transformer T1. This transformer provides isolation and steps down the incoming line voltage to about 40 volts ac. Its output is fed to output converter board A2 through connectors J4/P4 where the ac voltage is converted to dc by a full-wave rectifier, regulator, and filter circuit. The dc output is regulated to 18 volts, which is the voltage required by the circuits contained on both boards A1 and A2. The dc voltage is routed to board A1 through cable W3, feed-through capacitors C1 and C2, and cable W2 via connectors P3/J3 and P2/J2.

1.5.3 IF Modulator A1

IF modulator board A1 takes the baseband video and audio signals and mixes each with an individual local oscillator to produce separate video and audio IF frequencies. The video IF signal is produced by am techniques and the audio IF signal is produced by fm techniques. These separate IF frequencies are then combined to form a composite IF signal. The composite IF signal is then routed to output converter board A2 through rear panel loop-through connectors J8 and J9.

Baseband video is applied to IF modulator terminals E1 and E2 through rear panel connector J16 via cable W11. The circuitry is factory adjusted to produce 87.5 percent modulation of the IF carrier with a 1 volt, peak-to-peak baseband video signal applied to this input. Baseband audio is applied to the IF modulator board through a 600 ohm balanced input from rear-panel terminal board TB1 via cable assembly W1 and connector P1/J1. The audio circuitry is factory adjusted to produce 25 kHz peak deviation with a 0 dBm, 10 kHz signal applied to its input.

In a standard 6330 the separate video and audio IF signal paths are not available for external use. However, on units supplied with the DIFL (dual IF loop-through) option, the separate video and audio IF signals are routed through rear panel connectors J10 through J15. This makes these IF signals available for external scrambling.

The individual IF signals are then combined into a composite IF signal. This signal exits board A1 at terminals E3 and E4, and is routed through rear panel loop-through connectors J9 and J8 to output converter board A2, terminals E1 and E2. The composite IF loop-through connections are standard and allow use for IF switching and other such functions. The composite IF signal is factory adjusted for a video IF output level of +43 dBmV and an audio IF output level 15 dB below the video.

The front panel indicators (WHITE CLIP, AUDIO OVERDEVIATION, and POWER) are also driven from IF modulator board A1.

1.5.4 Output Converter A2

Output converter board A2 takes the composite IF signal from IF modulator A1 and mixes this signal with a local oscillator to produce the desired CATV channel.

The composite IF signal from rear-panel connector J8 is applied to board terminals E1 and E2 via cable W8. Front panel RF LEVEL control allows a 10 dB attenuation adjustment of this input; following this control, the output converter has a fixed gain of 17 dB. Therefore, RF LEVEL control allows the final rf output to be adjusted from +50 dBmV to +60 dBmV.

The -20 dB TEST point (located on the front panel) provides a measurement point with an output at a level 20 dB below the final RF OUTPUT that is available from connector J6.

1.6 MODULATOR OPTIONS

The 6330 has two functional options available and one physical option. The functional options consist of dual IF loop-through and spectrum inversion. The physical option consists of a rack adaptor for rack mounting the 6330. Each of these options is described below.

1.6.1 Dual IF Loop-through

The dual IF loop-through (DIFL) option provides an interface for use with a scrambler. Either or both audio and video IF signal paths can be broken to allow scrambling. The video IF signal can be made available either before the SAW filter (option DIFLA) or after the SAW filter (option DIFLB), depending on the scrambling system requirements. The respective connectors are mounted on the rear panel of the 6330 when this option is included. Figure 3-1 identifies these connectors and table 3-1 describes their function.

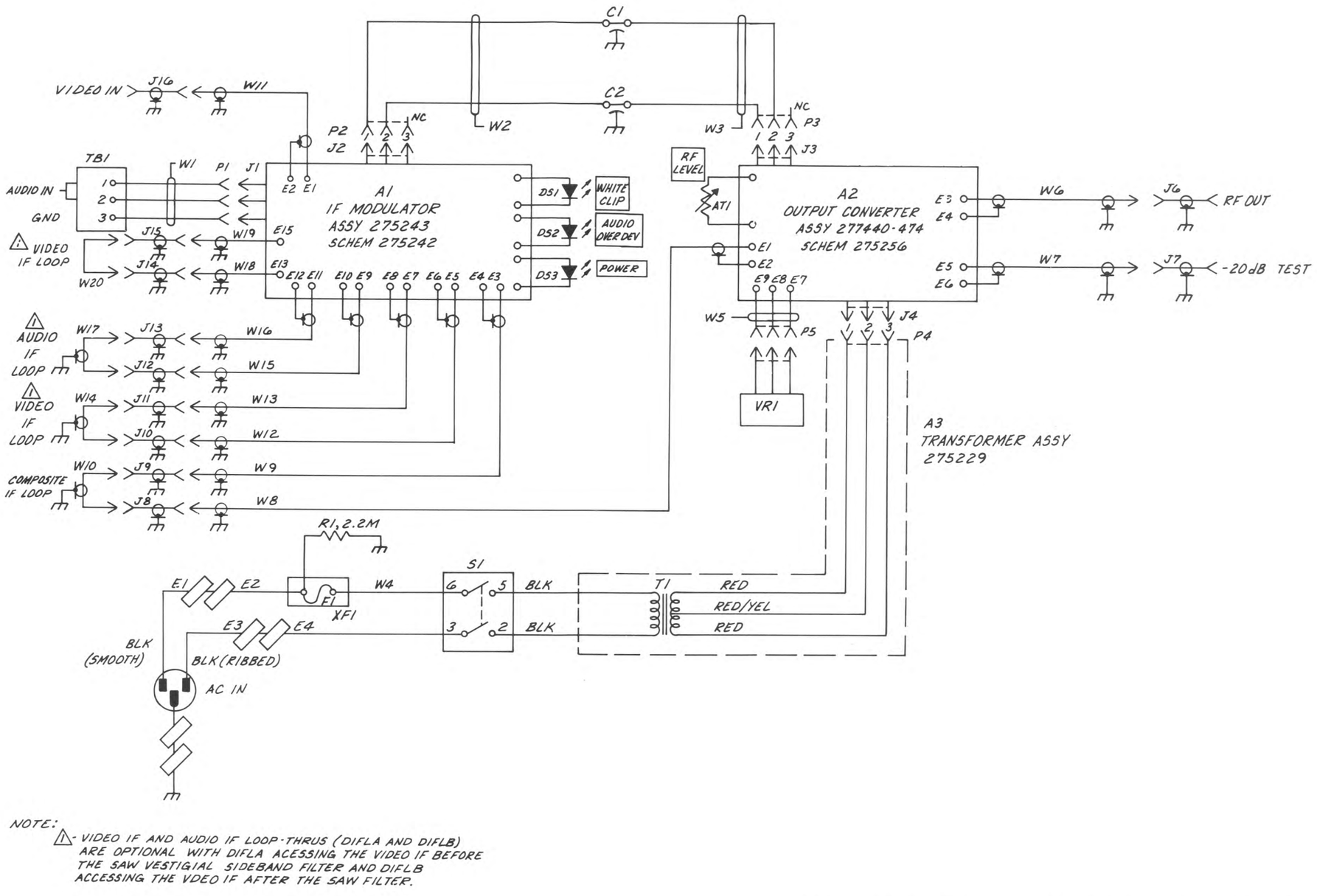
1.6.2 Spectrum Inversion

The spectrum inversion option inverts the video and audio rf carrier signals by placing the video carrier at 4.5 MHz above the audio carrier. The rf output signal is contained within the normal channel allocation, with the video carrier located 1.25 MHz below the upper channel boundry.

1.6.3 Rack Adapter

The optional rack adapter is an assembly that holds up to four 6330s or a combination of one Scientific-Atlanta Model 6650 Receiver and up to two 6330s. The rack adapter fits a standard 19 inch EIA equipment rack. If less than four 6330s are purchased with a rack adapter, blank panels are available to

cover the empty spaces. The rack adapter can also be supplied with optional equipment slides or support brackets. These slides allow the adapter to be easily pulled out of the rack for adjustment or inspection of the units installed in the rack adapter.



NOTE:
⚠ - VIDEO IF AND AUDIO IF LOOP-THRUS (DIFLA AND DIFLB) ARE OPTIONAL WITH DIFLA ACESSING THE VIDEO IF BEFORE THE SAW VESTIGIAL SIDEBAND FILTER AND DIFLB ACCESSING THE VDEO IF AFTER THE SAW FILTER.

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Figure 1-4. 6330 Overall Schematic/Wiring Diagram

SECTION 2
INSTALLATION

2.1 INTRODUCTION

This section includes unpacking instructions, installation prerequisites, and the installation procedure.

2.2 UNPACKING AND INSPECTION

2.2.1 General

All Scientific-Atlanta units are thoroughly inspected and carefully packed before shipment. However, responsibility for their safe delivery is assumed by the carrier at the time of shipment. Furthermore, damaged units should not be returned to Scientific-Atlanta; instead, file a claim with the carrier as noted in the following paragraphs.

2.2.2 Concealed Loss or Damage

Concealed loss or damage means loss or damage which does not become apparent until the unit has been unpacked. The contents may be damaged in transit due to rough handling, even though the carton may not show external damage. When the damage is discovered upon unpacking, make a written request for inspection by the carrier's agent within 15 days of the delivery date, then file a claim with the carrier, since such damage is the carrier's responsibility. By following these instructions carefully, Scientific-Atlanta guarantees its full support of your claims to protect you against loss from concealed damage.

2.2.3 Visible Loss or Damage

Any external evidence of loss or damage must be noted on the freight bill or receipt, and signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier refusing to honor a damage claim. The form required to file such a claim will be supplied by the carrier.

2.2.4 Equipment Inventory

Now that you have inspected the shipment for damage, you need to verify that all items ordered have been received. This is especially important if your order was for more than a single 6330 or was to include any of the options, like the rack adaptor and equipment slides. Check off each item received against that listed on the packing slip included with the shipment, and verify that this list matches your purchase order. If any items are missing, notify Scientific-Atlanta or your local distributor right away.

2.2.5 Equipment Returns

Scientific-Atlanta makes a genuine effort to ensure that all items arrive safely and in working order. Occasionally, despite these efforts, equipment will be received which is not in working condition. When this occurs and it is necessary to return the equipment to us for either repair or replacement, or when operational equipment requires repair, the return can be expedited by following the procedures given below:

a. Tag or identify the defective equipment and note the defect and circumstances, if any.

b. Reference the sales order and purchase order and the date the equipment was received.

c. Notify Scientific-Atlanta's Product Support Services of the defect and request shipping instructions; their toll-free telephone number is 800-241-1966 extension 5300 outside Georgia; in Georgia call 404-925-5300.

2.3 INSTALLATION PREREQUISITES

2.3.1 Space and Physical Arrangement

The 6330 is small in size (see the outline drawing shown in figure 1-2) and therefore does not require much space. It can be rack mounted or simply set on a shelf or table along with your other Mini-Cable System equipment. Details for rack mounting are given below. When mounting the 6330 on a shelf or table, the only requirement is to ensure that the unit is safe from falling caused by tangled or strained interconnecting cables.

2.3.2 Cooling Requirements

CAUTION

Prolonged operation of the 6330 above the maximum specified operating temperature can void the warranty.

The 6330 should be located in an air-conditioned environment and normally does not need forced-air ventilation. The unit's top cover and bottom are slotted to allow normal ventilation and should never be obstructed. When mounting the 6330 in a high density equipment enclosure, forced-air ventilation should be provided to prevent high internal ambient temperatures. Although the 6330 has been tested by operating at an ambient temperature of +50°C (120°F), this is not a recommended normal operating temperature for high component reliability and long unit life.

When rack-mounting the unit in an equipment enclosure, allow at least 1.75 inches of space above and below the 6330. It is good design practice to locate blower inlets near the bottom of the enclosure and outlets as close to the top as possible to boost, rather than buck, the natural-convection air currents. Type and design of inlets, outlets, air filters and rfi filters are factors that determine the type of fans or blowers that can be used. In certain cases, air deflecting baffles may be required to prevent sluggish layers of air from forming between closely stacked instruments. For a 40°C maximum external ambient, the recommended air movement through the system enclosure per kilowatt dissipated inside the enclosure is 200 ft^3/min/kW.

2.3.3 Power Requirements

WARNING

FOR RELIABLE OPERATION AS WELL AS SAFETY, THE 6330 REQUIRES A GOOD EARTH GROUND CONNECTION FOR THE THIRD PRONG ON ITS ELECTRICAL POWER PLUG.

The 6330 requires a standard duplex power receptacle capable of supplying 105-125 V ac, 60 Hz at 30 watts.

CAUTION

Damage to the 6330 will occur if you connect its power cord to a 230 V ac source. Be sure that your line voltage is correct.

2.3.4 Cabling

You will need to supply coaxial cables for the 6330's VIDEO INPUT, RF OUTPUT and any additional cables for use with the optional loop-through connections when their options have been included with your order. In addition, an audio input cable is required; this is generally a twisted-pair of standard telephone-type wires.

2.3.5 Auxilliary Equipment

A prerequisite to installing your 6330 is to make sure that you have, or have ordered, all auxilliary equipment necessary to complete your basic network. This would include your earth station equipment, headend equipment, and distribution equipment.

2.4 INSTALLATION

If you are installing your 6330 on a shelf or in a closet, no specific mounting instructions are necessary, so long as you follow the suggested installation prerequisites previously given. However, cable connecting instructions and rack mounting instructions are given below.

2.4.1 Rack Mounting

Rack mounting is accomplished by use of the optional rack adapter which, in turn, is installed in an EIA standard 19-inch wide by 24-inch deep electronic equipment rack. The rack adapter can house up to four 6330s or a combination of one Scientific-Atlanta Model 6650 Receiver and up to two 6330s; a front view of this arrangement is shown in figure 2-1. When fewer units are to be installed in the rack adapter, an optional blank panel can be installed in each empty space.

The rack adapter must be supported in the equipment rack by some kind of support rails or the optional equipment slides. The slides are provided with front disconnect and lockout so that the rack adapter can be easily removed from the rack.

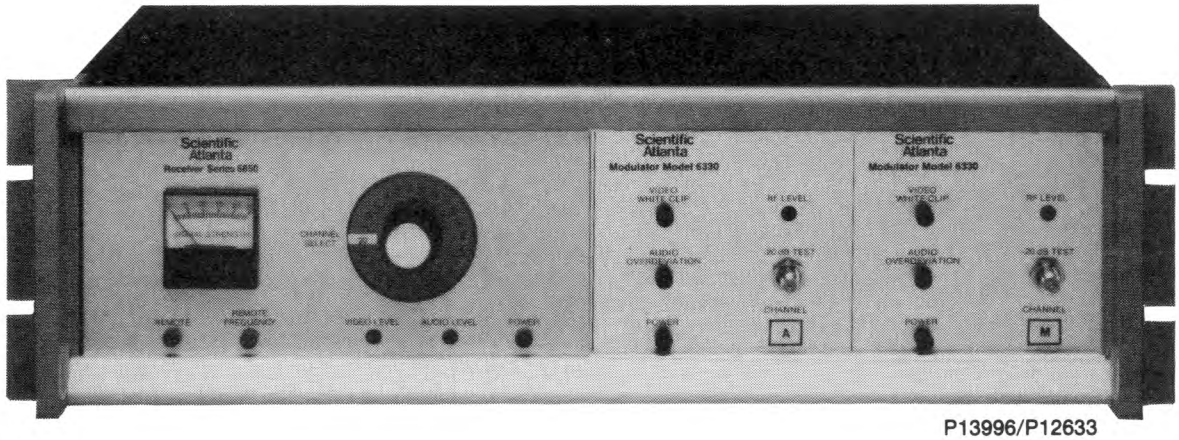


Figure 2-1. Front View of Rack Adapter with Two 6330s and One 6650 Installed

CAUTION

When equipment slides are not used to support the rack adapter in the equipment rack, do not bolt the front panel edge flanges to the rack as a means of support. Additional support is required to hold the rack adapter. An angle bracket bolted to each side of the rack can serve as a support rail upon which the rack adapter can rest.

The equipment slide assembly includes a chassis member, which is bolted to each side of the rack adapter, and a rack member, which is bolted to each side of the equipment rack. Figure 2-2 shows the chassis member of the slide assembly bolted to a rack adapter housing four 6330s. The following procedure describes how to install the slide assembly to the rack adapter and to the equipment rack.

Figure 2-2. Slide-Equipped Rack Adapter Housing Four 6330s

2.4.1.1 Slide Installation Procedure. Refer to figure 2-3 while performing the following steps:

Step 1. Extend the right slide to full length and disconnect the chassis member from the rack member by tripping the lock release lever.

Step 2. Bolt chassis member to the rack adapter using two No. 8-32 x 1/4L pan-head screws, taking care not to strip the chassis side panel. (Lock release lever should face the front of the chassis).

Step 3. Bolt mounting brackets to the front and rear of the rack member using two No. 8-32 flat head screws and two No. 5652 nut plates. The front bracket should protrude 1.60 inches, minimum, from the rack member. Brackets should be mounted loosely to permit final adjustment to rack length.

Step 4. Adjust mounting brackets to overall rack length and tighten bracket-slide interconnecting screws.

Step 5. Bolt rack member into the rack as shown in figure 2-3, using two No. 10-32 flat head screws and two No. 5641 nut bars. Leave screws loose to allow final adjustment after chassis mounting.

Step 6. Repeat steps 1 through 5 for the left slide.

2.4.1.2 Chassis Mounting. Insert the chassis into the rack, engaging the chassis and rack members of the slide. Adjust positioning, if necessary, to ensure free travel of the chassis. Tighten the screws mounting the slides into the rack.

2.4.2 Cable Connecting

All signal and power connections are made through the 6330's rear panel. Each connector is identified in figure 3-1 and described in table 3-1. Connect all cables to each of your 6330s as described in the following steps:

Step 1. Install a coaxial cable to the 6330 VIDEO INPUT connector from your network receiver's VIDEO OUTPUT connector or other video source as applicable.

Step 2. Install a coaxial cable from the 6330 RF OUTPUT connector to your network combiner's RF INPUT connector.

Step 3. Install a twisted pair cable to the 6330 AUDIO INPUT terminals from your network receiver's AUDIO OUTPUT terminals or other audio source as applicable.

Step 4. If you desire to inject a composite IF signal from some external source, remove the COMPST IF loop through cable from the 6330 and install a coaxial cable from your external source to the IF INPUT connector.

Step 5. If your 6330 has the DIFL option, and you desire to scramble the video and/or audio signal, remove the appropriate IF loop through cable and connect input and output coaxial cables from your scrambler.

Step 6. Connect the power cord to a standard 115 volt (nominal) ac receptacle.

Step 7. If cable connections have not been made for your other network units, do this now. This completes installation of your 6330; it should now be ready for operation, see section 3.

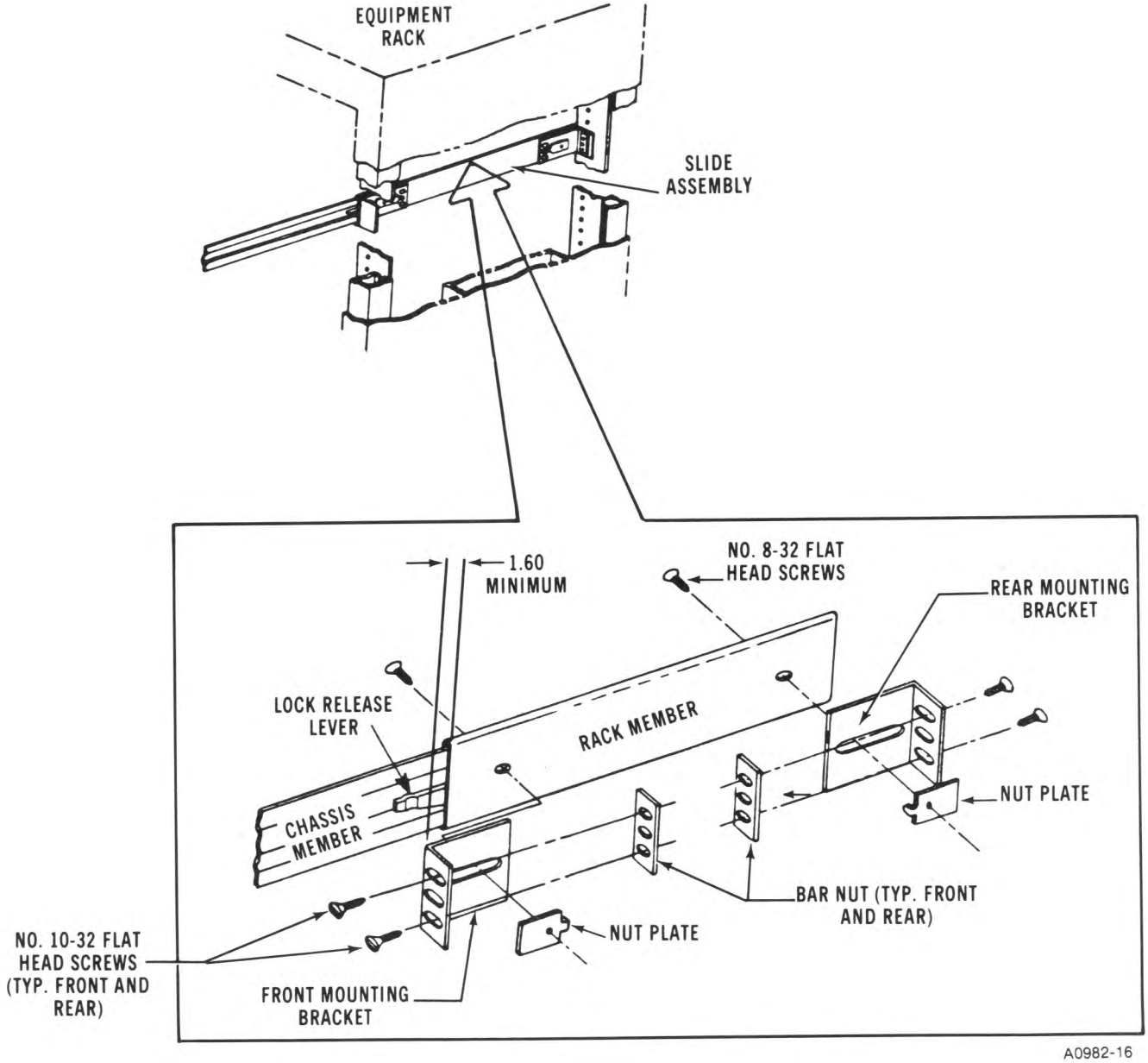


Figure 2-3. Slide Mounting Detail

SECTION 3
OPERATION

3.1 INTRODUCTION

This section contains operating information for the 6330. Included is a description of controls, indicators, and connectors, a turn-on procedure, and instructions for performing user adjustments.

3.2 CONTROLS, INDICATORS, AND CONNECTORS

Figure 3-1 identifies all controls, indicators, and connectors for the 6330. This figure is keyed to table 3-1 which describes the function of each item. Review this material thoroughly to obtain a good understanding of each item's function and its location.

3.3 TURN-ON PROCEDURE

To turn on your 6330 is a simple matter of setting the rear-panel power ON/OFF switch to the ON position. When this is done, the front-panel POWER LED should light. The next thing to do is perform any of the applicable user adjustments described below.

3.4 USER ADJUSTMENTS

The 6330 has four user adjustments that may require altering during the course of normal use. These adjustments are as follows:

- Output rf level
- Output audio level (audio carrier level)

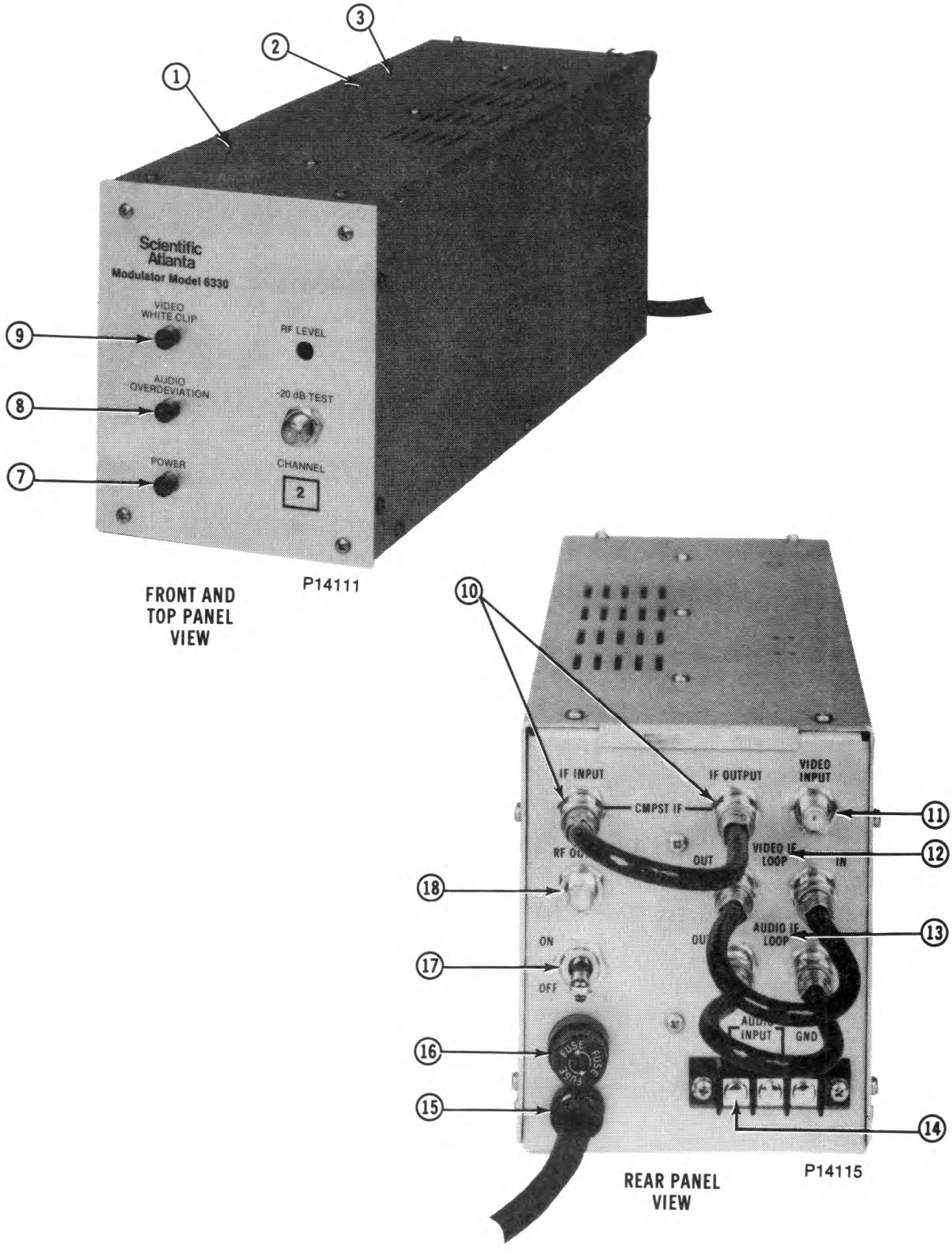


Figure 3-1. 6330 Controls, Indicators, and Connectors

Table 3-1. 6330 Controls, Indicators, and Connectors

Figure 3-1 Index Reference	Item	Function
1	Percent of Modulation Potentiometer R2	A screwdriver adjustment (accessable through a hole in top cover) used to set the percent or depth of video modulation.
2	Audio IF Level Potentiometer R90	A screwdriver adjustment (accessable through a hole in top cover) used to set sound carrier level relative to picture carrier level.
3	Audio Deviation Potentiometer R67	A screwdriver adjustment (accessable through a hole in top cover) used to set deviation of the audio carrier. This control allows sensitivity adjustment over a 20 dB range of audio input signal. The 6330 is normally supplied so that full deviation may be obtained with input signal levels between -10 dBm and +10 dBm.
4	RF LEVEL Control AT1	A front-panel screwdriver adjustment used to set the RF OUTPUT signal level.
5	-20 dB TEST Connector	A female F-type connector from which a reduced (20 dB down) RF OUTPUT signal is available for test purposes.
6	CHANNEL Designator	A decal affixed that indicates the specific channel at which the 6330 operates.
7	POWER Indicator DS3	An LED (light emitting diode) that lights when the power switch is set in the ON position to indicate operating voltage has been applied.
8	AUDIO OVERDEVIATION Indicator DS2	An LED that lights when the audio deviation exceeds approximately 25 kHz.
9	VIDEO WHITE CLIP Indicator DS1	An LED that lights if excessive video is applied to the modulator, resulting in peak white clipper operation.

Table 3-1. 6330 Controls, Indicators, and Connectors - continued

Figure 3-1 Index Reference	Item	Function
10	CMPST IF INPUT/OUTPUT Loop-through Connectors	Female F-type connectors serve to loop-through composite IF signal from IF modulator A1 to output converter A2. An external composite IF signal can be fed directly to output converter A2 via the IF INPUT connector.
11	VIDEO INPUT Connector	Female F-type connector for baseband video input.
12	VIDEO IF LOOP OUT/IN Connectors for DIFL option	Female F-type connectors serve to loop-through video IF signal within IF modulator A1. Allows connection to and from scrambler.
13	AUDIO IF LOOP OUT/IN Connectors for DIFL option	Female F-type connectors serve to loop-through audio IF signal within IF modulator A1. Allows connection to and from scrambler.
14	AUDIO INPUT/GND Terminal block	Screw terminals for baseband audio input (600Ω balanced input).
15	Power Cord	Input line for ac power. Equipped with 3-prong, grounded plug.
16	FUSE Holder SF1	Contains ac line fuse (3/8A) for protection of 6330 against overloads.
17	ON/OFF Power Switch	A toggle switch used to control application of power to 6330. (This switch is not available on U.L. approved units.)
18	RF OUTPUT Connector	Female F-type connector for final rf signal at channel frequency.

- Audio deviation
- Percent of modulation

Except for the output rf level, these adjustments are factory set and will require readjustment only if your input signal levels are different than those noted below. The following paragraphs describe how to perform each adjustment.

3.4.1 Output RF Level Adjustment

The final output rf signal level from the 6330 is adjustable from +50 dBmV to +60 dBmV as measured at the rear-panel RF OUTPUT connector. The output signal level needed is based on your particular television network requirements. Adjustment is made with front-panel RF LEVEL control (item 4 figure 3-1). Adjust as necessary.

3.4.2 Output Audio IF Level Adjustment

The output level of the audio carrier is factory set to be 15 dB below the output video carrier level. If you need a different audio carrier level, adjust potentiometer R90 (item 2 figure 3-1) as necessary.

3.4.3 Audio Deviation Adjustment

The audio deviation is factory set at 25 kHz with a 0 dBm, 10 kHz input signal. For a different input audio signal, you will need to reset this adjustment to again produce the 25 kHz of deviation. Adjust R67 (item 3 figure 3-1) until front-panel AUDIO OVERDEVIATION LED just lights, then back off slightly until the LED just goes out.

3.4.4 Percent of Modulation Adjustment

With a baseband video input signal level of 1 volt, peak-to-peak, the percent of modulation is factory set to 87.5 percent. If the input baseband video signal is at some other level, you will need to readjust the percent of modulation potentiometer R2 (item 1 figure 3-1). Adjust R2 until the front-panel

WHITE CLIP LED just lights, then back off until the LED goes out. This will result in approximately 87.5 percent modulation for your input baseband video signal, and indicate white clipping if approximately 95 percent modulation occurs.

3.5 OPERATION

There is no operating procedure involved with the 6330. Once power is applied and any user adjustments have been performed, no further attention is required. However, should a problem develop where you suspect a malfunction with the 6330, refer to sections 4 and 5 to aid you in isolating the problem area.

SECTION 4
THEORY OF OPERATION

4.1 GENERAL

This section covers the theory of operation of the 6330. Effective trouble-shooting of the modulator is not possible without a suitable understanding of the theory of operation of the unit. Therefore, it is recommended that this section be studied thoroughly before attempting to determine what module in the modulator is defective.

4.2 POWER SUPPLY CIRCUIT DESCRIPTION

The power transformer (T1) and the voltage regulator (VR1) portion of the power supply are located on the chassis, while the rectifier diodes and filter capacitors are located on output converter board A2. Therefore, refer to the overall schematic of the 6330, figure 8-5, and the output converter schematic, figure 8-9, while reading the following.

The secondary winding leads from transformer T1 are connected to output converter A2 through connector P4/J4. Pin 2 is the center tap, common-ground lead. Pins 1 and 3 are connected to diodes CR1 and CR2 which form a full-wave rectifier. The rectified volatge is applied to the input of voltage regulator VR1 through terminal E7. Capacitor C1 provides filtering of the input raw dc voltage and C2 bypasses any high frequencies. Voltage regulator VR1 provides a stable +18 volts which is fed back to the board through terminal E9. At this point, capacitors C3 and C4 provide additional filtering to the regulated voltage. Diode CR3 is a protection device for the regulator; after input ac power is turned off, CR3 provides a discharge path for the filter capacitors.

The regulated +18 volts is then distributed to the output converter circuits and is also routed to IF amplifier board A1. The routing to A1 is through connector P3/J3, cable W3, feedthrough capacitor C1 and C2, cable W2, and connector P2/J2.

4.3 IF MODULATOR CIRCUIT DESCRIPTION

4.3.1 Introduction

Refer to the 6330 IF Modulator Schematic Diagram, figure 8-7. The IF modulator consists of a video IF modulator and an audio IF modulator. The video modulator accepts a negative-sync baseband video input and generates a video IF having a 45.75 MHz carrier (or for a spectrum inverted unit, a 42.25 MHz carrier). The audio modulator generates a 41.25 MHz sound IF from a balanced audio input (or a 46.75 MHz IF for a spectrum inverted unit). The combined audio and video IF signals or composite IF signal is supplied to the output converter.

4.3.2 Video IF Modulator

The incoming baseband video signal is applied through connector J16 to an input impedance of 75 ohms formed by R1 and R2. Potentiometer R2, the percent of modulation control, attenuates the video signal to produce the proper amount of modulation of the video IF carrier. The signal is applied to buffer Q1 and then to the delay predistortion network consisting of C3-C7 and L1-L3. Common base stage Q3 amplifies the signal to a level suitable for the white-clip circuit; roughly 1.5 volts peak-to-peak for 87.5 percent modulation. After buffer Q3, the sync-tip of the signal is clamped to approximately 10 volts by the diode clamp consisting of CR1-CR3, C9 and associated components. The clamp is followed by buffer stage Q4-Q5 and white clip transistor Q6. The white clip level is adjusted by potentiometer R24, and is factory set to begin clipping at 95 percent modulation. When clipping occurs, the white-clip indicator LED DS1 is switched on by Q7 and Q8, with capacitor C11 functioning to sustain LED illumination after initial turn-on. The indicator circuit is sensitive enough to light the LED using a vertical interval test signal (VITS).

From the emitter of Q5, the clamped video signal is fed through an attenuator, formed by R17 and R18, to balanced modulator U1. The video carrier of 45.75 MHz (or 42.25 MHz for a spectrum-inverted unit) generated by crystal oscillator Q9 is fed through transformer T1 to the modulator. Capacitor C18 is a balance control and is used to null-out carrier feedthrough. The carrier level at modulator U1's output is controlled by potentiometer R36. This potentiometer is factory set for a +43 dBmV (approximately -5 dBm) carrier at the composite IF output. Resistor R36 obtains its dc reference from the clamp zener CR2; this results in good carrier level temperature stability.

The IF signal from modulator U1 is applied to amplifier Q10, and then passes through the low-pass filter formed by L7, L8 and C23-C25. At this point, the signal is available as an optional video IF loop-through DIFLA, on rear-panel connectors J10 and J11. Carrier level at this point is nominally -16 dBm and both output and input impedances are 75 ohms. Following the optional loop-through, the signal is amplified by feedback amplifier Q11 and Q12 before being applied to the SAW vestigial sideband filter. The SAW filter has a frequency response which will pass either a normal or spectrum-inverted signal. The SAW filter is followed by gain stages Q13 and Q14. The output of Q14 is available as an optional video IF loop-through (DIFLB) through rear-panel connectors J14 and J15, at an impedance of 75 ohms. After loop-through DIFLB, the video IF signal passes through transformer T2, where audio IF is added. Finally the signal is bandpass filtered by L13, L14 and C61-C66, and appears at the composite IF output rear-panel connector, J9.

4.3.3 Audio IF Modulator

The audio input signal is applied to connectors J1-1 and J1-3, which present a balanced 600 ohm impedance. The balanced input signal is converted to an unbalanced signal by operational amplifier U2A, and is then attenuated by potentiometer R66, the audio deviation control. Pre-emphasis of the signal is performed by U2B and associated components.

The output of U2B is fed to the overdeviation indicator circuit U2C and U2D. Operational amplifier U2C and associated components form a peak detector, and U2D is a comparator whose threshold voltage is adjusted by potentiometer R76, the overdeviation indicator control. This potentiometer is adjusted to cause LED DS1 to turn on when peak deviation reaches 25 kHz.

The output of U2B is also applied to varactor diode CR7, causing frequency modulation of the 41.25 MHz audio IF subcarrier generated in oscillator Q15. The oscillator frequency may be changed to 46.75 MHz for spectrum inversion by changing L10 from .35 μH to .27 μH. The audio IF subcarrier signal is fed from the oscillator to buffer Q16. The signal is taken from the emitter of Q16 and applied to the attenuator composed of R90, R92, and potentiometer R91, the audio IF level control. After the attenuator, the signal passes through bandpass filter composed of L11, L12 and C56-58. As an option the audio IF signal is available at rear-panel connectors J12 and J13, the audio IF loop-through. The impedance level is 75 ohms. The audio IF signal is next applied to the -10 dB connection of transformer T2, combining with the video IF signal. The combined signals are bandpass filtered and appear at composite IF output rear-panel connector J9.

The frequency of the audio IF subcarrier oscillator is controlled by the phase-locked loop consisting of Q16, U3, U4, R99-R101, and C75. Buffer amplifier Q16 provides, at its collector, a signal large enough to switch prescaller U3, a ÷16 TTL counter. From U3, the signal is applied to frequency synthesizer U4. Here it is divided by 5280, or by 5984 for a spectrum-inverted unit; the divide ratio is programmed by plug P1. The output of an 8 MHz reference oscillator controlled by crystal Y2 is divided by 1024 and phase compared with the divided-down signal. The phase comparator output on pin 7 is fed to the loop filter composed of R99-101 and C75. The error voltage from the loop filter is applied to varactor CR7, completing the feedback loop. Note that C75 is connected to a voltage divider (R100 and R101) rather than to a resister to ground. This divider places roughly 5 volts on the negative side of C75, and has the effect of speeding loop acquisition.

4.4 OUTPUT CONVERTER CIRCUIT DESCRIPTION

4.4.1 Introduction

Refer to the 6330 Output Converter Schematic Diagram figure 8-9. The output converter mixes an onboard crystal controlled local oscillator with an incoming composite IF signal to produce the desired output CATV channel frequency. This signal is then amplified and filtered to produce the desired output level and passband response.

4.4.2 Output Converter

The composite IF signal is applied to terminals E1 and E2 through rear-panel connector J8 via coaxial cable W8. The signal passes through a 0 to 10 dB continuous variable attenuator consisting of AT1, R1, R2 and R3 followed by a 6 dB fixed attenuator consisting of R4, R5 and R6 prior to mixing with the local oscillator. The variable attenuator AT1 is accessible through the front panel hole labeled RF LEVEL and is used to adjust the output level from +50 to +60 dBmV continuously.

The local oscillator is formed by Q1, Y1, and associated circuitry. The signal available at the collector of Q1 is the crystal oscillator frequency and several harmonics. For channels 2 through 6 the collector of Q1 is tuned at the oscillator fundamental frequency and then amplified by Q2. For channels 7-13 and A-W, the collector of Q1 is tuned to the second harmonic of the oscillator frequency, by L14 and C44 through C47, as well as being matched to the Q2 input impedance. A series trap, formed by L14, C45 and C46, is used to trap the oscillator fundamental frequency for these channels. The oscillator signal is amplified by Q2 and is then filtered by a double tuned circuit consisting of L10, C12, and C34 through C39. For channels 7-13 and A-W, a series trap (formed by L12, C41, and C42) is tuned for the oscillator fundamental to further reduce its level. Following the filter, the local oscillator signal passes through a fixed attenuator (formed by R16, R17, and R18) and is applied to mixer U1.

Following the double balanced mixer, U1, a double tuned filter circuit (consisting of L1, L2, and C7 through C13) passes the frequency that is the difference between the crystal oscillator frequency and the incoming composite IF frequency. This difference frequency signal is then attenuated by a 3 dB fixed attenuator (consisting of R7, R8, and R9) after which it is amplified a nominal 14 dB by U2. Components L3, L4, and C16 through C22 form a double tuned filter circuit are used to shape the passband followed by a 6 dB fixed attenuator formed by R11, R12, and R13. The signal is then amplified by a hybrid amplifier HY1, having a nominal gain of 32 dB, prior to passing through a final double tuned filter circuit formed by L5, L6, and C25 through C31. For channels 2 through 4, C32, C33 and L7 form a tunable trap to remove any IF frequency which might still appear at the output.

The final rf output frequency from terminals E3 and E4 is then supplied to the rear panel through coaxial cable W6 and connector J6. Resistors R14 and R15 form a voltage divider which provides a test signal to the front panel connector which is 20 dB below the rf output signal.

4.5 OPTIONS

4.5.1 DIFLA

Dual IF Loop through A is an option that provides an external interface for use with a scrambler. Audio and/or video IF signal paths can be broken to allow scrambling. With the DIFLA option, the video IF signal is made available before the SAW vestigial sideband filter. All of the cables and hardware required to install this option either in the factory or in the field are available under Scientific-Atlanta part number 275248.

To install DIFLA refer to figure 8-6, the assembly drawing for the IF modulator and to figure 8-3, the assembly drawing for the overall unit. First referring to figure 8-6, per note 2; jumper W1 is removed or not installed and W12 and W13 are installed in its place. Note that W12 is installed on the

component side of the printed wiring board (pwb), W13 is installed on the non-component side, and both are held in place by cable tie, item number 7, which is provided in the option kit. The audio IF loop through is installed per detail B on figure 8-6. Jumper W3 is replaced by W15 and W16 as shown with W15 being mounted on the component side and W16 on the non-component side of the pwb.

After the cables are installed on the pwb, the non-double "D" end of the feed-through connectors are screwed on the cables, and the double "D" end fed through the chassis as follows: Referring to figure 8-3, W12 is installed in rear panel hole marked VIDEO IF LOOP IN, W13 to VIDEO IF LOOP OUT, W15 to AUDIO IF LOOP IN, AND W16 to AUDIO IF LOOP OUT. Install flat washer and nut on each connector on the outside of the chassis. If a scrambler is to be used right away, then W14 and W17, the black coaxes provided in the kit will not be used and cables provided by user will be installed between the modulator and scrambler. In the event a scrambler is not to be used right away, W14 will connect between the VIDEO IF LOOP IN and OUT connectors, and W17 between the AUDIO IF LOOP IN and OUT connectors.

4.5.2 DIFLB

Dual IF Loop through B is an option that provides an external interface for use with a scrambler. Audio and/or video IF signal paths can be broken to allow scrambling. With the DIFLB option, the video IF signal is made available after the SAW vestigial sideband filter. All of the cables and hardware required to install this option either in the factory or in the field are available under Scientific-Atlanta part number 275249.

To install DIFLB refer to figure 8-6, the assembly drawing for the IF modulator and to figure 8-3, the assembly drawing for the overall unit. First referring to figure 8-6, per detail C; jumper W2 is removed or not installed and W18 and W19 are installed in its place. Note that W18 is installed on the component side of the pwb, W19 is installed on the non-component side of the pwb. The audio IF loop through is installed per detail B on figure 8-6. Jumper W3 is replaced by W15 and W16 is shown with W15 being mounted on the component side and W16 on the non-component side of the pwb.

After the cables are installed on the pwb, the non-double "D" end of the feed-through connectors are screwed on the cables, and the double "D" end fed through the chassis as follows: Referring to figure 8-3, W18 is installed in rear panel hole marked VIDEO IF LOOP IN, W19 to VIDEO IF LOOP OUT, W15 to AUDIO IF LOOP IN, and W16 to AUDIO IF LOOP OUT. Install flat washer and nut on each connector on the outside of the chassis. If a scrambler is to be used right away then W20 and W17, the black coaxes provided in the kit will not be used and cables provided by user will be installed between the modulator and scrambler. In the event a scrambler is not to be used right away, W20 will connect between the VIDEO IF LOOP IN and OUT connectors, and W17 between the AUDIO IF LOOP IN and OUT connectors

4.5.3 Spectrum Inversion

The spectrum inversion option kit, Scientific-Atlanta part number 275247, can also be installed at the factory or be a field installation. It is recommended that if the unit is expected to meet all of the published specifications that the IF pwb be realigned after field modification from normal to spectrum inverted or vice versa.

To install the spectrum inversion option (SI) refer to figure 8-6, the assembly drawing for the IF modulator. Note 5 on this drawing indicates that for the SI unit to place plug P1 on the bottom pins of J3 as indicated by the dotted P1. The normal unit is shown by the solid P1 on the drawing. Per note 6, L10 must change to a .27 μH (Scientific-Atlanta part number C077944) and Y1 must be changed to a 42.25 MHz crystal (Scientific-Atlanta part number C171757).

SECTION 5
MAINTENANCE AND TROUBLESHOOTING

5.1 GENERAL

This section includes troubleshooting procedures which should be of help to anyone attempting to repair a modulator that is not performing properly. Before attempting to make any repairs to the modulator, sections 3 and 4 should be read and thoroughly understood. Attempts to troubleshoot a piece of equipment without thoroughly understanding its operation generally fail. The first step in troubleshooting a defective modulator is isolating the problem to a particular circuit board (pwb). The pwb may then be replaced with a spare if one is available, and the defective pwb repaired at leisure, or the defective pwb may be repaired immediately using the modulator chassis as a test fixture. To use the modulator chassis as a test fixture, remove the top cover and replace the suspected defective pwb with one known to be good. All of the connections between the chassis and the circuit board are made without the use of a soldering iron. The only tool required is a phillips screwdriver.

If it is not desirable to perform maintenance in the field, the unit or pwb can be returned to Scientific-Atlanta where it can be repaired at no charge under warranty conditions; otherwise repair will be made at a nominal charge. Refer to section 2, paragraph 2.2.5, for information pertaining to returning equipment to Scientific-Atlanta.

5.2 TOOLS AND TEST EQUIPMENT

The only tools required to maintain and troubleshoot the 6330 are a phillips screwdriver for installing and removing the top cover and circuit boards, and an alignment tool for adjusting the variable components. The test equipment required may include a spectrum analyzer, oscilloscope, signal level meter, and voltmeter.

5.3 MAINTENANCE

User maintenance consists of general housekeeping and involves inspection to check equipment integrity and minor cleaning to remove dust and dirt. The following paragraphs describe these items as they apply to the 6330.

5.3.1 Visual Inspection

Inspect the 6330's interconnecting cables to be sure that all connections are secure and that there are no cuts or tears on the cable covering. Make sure that no strain is put on any cable that might cause it to break or pull the unit off its shelf; if not rack mounted.

5.3.2 Cleaning

WARNING

UNPLUG UNIT FROM WALL OUTLET BEFORE CLEANING TO AVOID POSSIBLE PERSONAL INJURY.

To clean the 6330, wipe exposed surfaces and cable assemblies with a damp cloth to remove dust or dirt. Do not use liquid cleaners or aerosol sprays.

5.4 FREQUENCY TABLE

Table 5-1 is a frequency table which may be useful in troubleshooting the 6330.

5.5 ISOLATING THE PROBLEM

Before removing the cover to troubleshoot, make sure the unit in question is truly defective by following the fault isolation diagram in figure 5-1. If the unit is blowing fuses proceed to power supply troubleshooting, paragraph 5.6.

Table 5-1. Frequency Table

CH	FREQ. RANGE IN MHz	LOCAL OSC. FREQ. IN MHz	STANDARD FREQ. IN MHz			SPECTRUM INVERTED FREQ. IN MHz		
			VIDEO	COLOR	SOUND	VIDEO	COLOR	SOUND
2	54-60	101	55.25	58.83	59.75	58.75	55.17	54.25
3	60-66	107	61.25	64.83	65.75	64.75	61.17	60.25
4	66-72	113	67.25	70.83	71.75	70.75	67.17	66.25
5	76-82	123	77.25	80.83	81.75	80.75	77.17	76.25
6	82-88	129	83.25	86.83	87.75	86.75	83.17	82.25
HI-VHF	174-216	221-257	---	---	---	---	---	---
7	174-180	221	175.25	178.83	179.75	178.75	175.17	174.25
8	180-186	227	181.25	184.83	185.75	184.75	181.17	180.25
9	186-192	233	187.25	190.83	191.75	190.75	187.17	186.25
10	192-198	239	193.25	196.83	197.75	196.75	193.17	192.25
11	198-204	245	199.25	202.83	203.75	202.75	199.17	198.25
12	204-210	251	205.25	208.83	209.75	208.75	205.17	204.25
13	210-216	257	211.25	214.83	215.75	214.75	211.17	210.25
MID-BAND	120-174	167-215	----	----	----	----	----	----
A	120-126	167	121.25	124.83	125.75	124.75	121.17	120.25
B	126-132	173	127.25	130.83	131.75	130.75	127.17	126.25
C	132-138	179	133.25	136.83	137.75	136.75	133.17	132.25
D	138-144	185	139.25	142.83	143.75	142.75	139.17	138.25
E	144-150	191	145.25	148.83	149.75	148.75	145.17	144.25
F	150-156	197	151.25	154.83	155.75	154.75	151.17	150.25
G	156-162	203	157.25	160.83	161.75	160.75	157.17	156.25
H	162-168	209	163.25	166.83	167.75	166.75	163.17	162.25
I	168-174	215	169.25	172.83	173.75	182.75	169.17	168.25
SUP-BAND	216-300	263-341	----	----	----	----	----	----
J	216-222	263	217.25	220.83	221.75	220.75	217.17	216.25
K	222-228	269	223.25	226.83	227.75	226.75	223.17	222.25
L	228-234	275	229.25	232.83	233.75	232.75	229.17	228.25
M	234-240	281	235.25	238.83	239.75	238.75	235.17	234.25
N	240-246	287	241.25	244.83	245.75	244.75	241.17	240.25
O	246-252	293	247.25	250.83	251.75	251.75	247.17	246.25
P	252-258	299	253.25	256.83	257.75	256.75	253.17	252.25
Q	258-264	305	259.25	262.83	263.75	262.75	259.17	258.25
R	264-270	311	265.25	268.83	269.75	268.75	264.17	264.25
S	270-276	317	271.25	274.83	275.75	274.25	271.17	270.25
T	276-282	323	277.25	280.83	281.75	280.75	277.17	276.25
U	282-288	329	283.25	286.83	287.75	286.75	283.17	282.25
V	288-294	335	289.25	292.83	293.75	292.75	289.17	288.25
W	294-300	341	295.25	298.83	299.75	298.75	295.17	294.25

If the unit is not blowing fuses but does not work properly, the easiest way to isolate which pwb is at fault is to drive the output converter with another IF signal, from a unit known to be good, followed by using the suspected 6330's IF modulator to drive the known good output converter. This will tell you which board is defective. If both boards appear defective, check the regulated output voltage. If it is not approximately 18 V dc, check the power supply circuitry and regulator for proper operation. If the voltage is correct, troubleshoot each pwb individually, as shown below.

5.6 POWER SUPPLY TROUBLESHOOTING

If the fuse keeps blowing, start by disconnecting the transformer secondary connector where it plugs into the output converter pwb. If the fuse continues to blow, check the ac input wiring for possible shorts and repair if necessary. If the wiring appears to be correct, then replace transformer T1. If, when the transformer secondary is disconnected, the fuse no longer blows, look for a supply short on one of the pwbs. Start by disconnecting one of the supply connectors which provide dc power to the IF modulator. If the fuse continues to blow, look for the short on the output converter pwb or in the voltage regulator. If the fuse no longer blows, check the IF modulator pwb and the feed through capacitors for possible shorts.

5.7 OUTPUT CONVERTER TROUBLESHOOTING

The most probable failure modes of the output converter are no output or high intermodulation distortion, possibly combined with low output. When no output exists from the output converter, verify first that indeed an IF signal is being supplied to the output converter and also verify that a local oscillator signal is being supplied from the output converter local oscillator. The local oscillator can be verified by moving plug P1 to allow the signal to be monitored through TP1. If these signals are being supplied and if the output is zero, then the most probable failure is a bad coax cable or the hybrid amplifier (HY1). This amplifier should be replaced if the cables appear to be all right. If the failure mode is high intermodulation distortion possibly

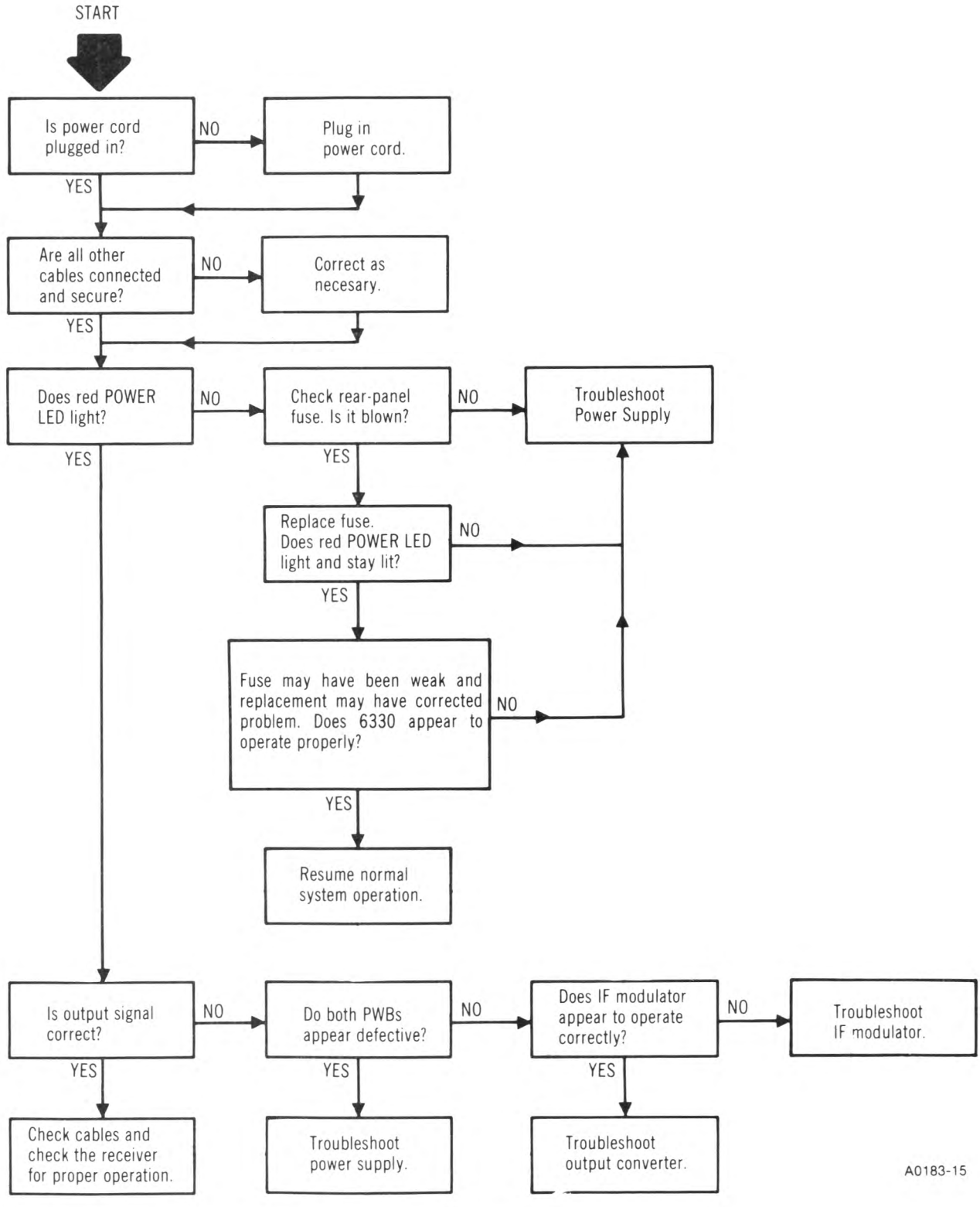


Figure 5-1. 6330 Fault Isolation Diagram

accompanied by loss of output level, first verify that the local oscillator signal being supplied is at a level of at least +7 dBm (+56 dBmV); should this level be low, the performance of the output converter will suffer. If the incoming local oscillator level is normal and yet the output exhibits excessive intermodulation distortion and possibly low output level, then the problem is probably in broadband amplifier U2 and associated components. Monitor the rf signals at TP2 and TP3 to further isolate the defective stage and replace as necessary. Realignment of the module may also be required.

5.8 IF MODULATOR TROUBLESHOOTING

5.8.1 Video Modulator

Two modes of video modulator failure most likely to occur are as follows:

1. No signal at composite IF output J9.
2. Carrier at J9 but no modulation.

1. No Output

   If the modulator has a video IF loopthrough, check that it is closed. Using a 100 MHz oscilloscope, check for carrier at the oscillator (junction of R30 and R31) and at amplifiers Q10, Q11, Q12, Q13, and Q14. To probe the collectors of Q11, Q12, or Q14, simply touch the oscilloscope probe to the transistor case. When the faulty stage has been located, check its dc bias and compare with the voltage indicated on the schematic diagram.

2. No Modulation

   Verify that properly formated video is being supplied to J16. Turn the depth of modulation control R2 clockwise to see if the white-clip lamp lights. If it does, the circuitry from the input through Q5 is functioning, and the problem is probably with the modulator chip U1. If the lamp doesn't light, use an oscilloscope to probe for the presence of video on the stages preceeding Q5.

NOTE: If a video signal greater than or equal to 2 volts peak-to-peak is present on the emitter of Q5 and the white-clip lamp does not light, the white-clip adjust R24 may be set improperly. Try turning R24 clockwise.

5.8.2 Audio Modulator

A television set connected to the modulator's RF OUT connector can be used to detect loss of audio subcarrier or loss of fm modulation. Noisy audio, as when the set is tuned to an unused channel, indicates that no carrier is present, or that the carrier has lost lock. If the television loud speaker is quiet, a carrier is present, but it is not being modulated.

At the IF modulator, these problems may be listed as follows:

1. No signal at audio IF test point TP1.
2. Audio IF subcarrier at TP1, but no modulation.
3. Audio IF subcarrier loss of lock.

1. No Output

If the modulator has an audio IF loopthrough, check that it is closed. Verify that the audio IF level control R90 is not set near the full counterclockwise position. Using a 100 MHz oscilloscope, check for signal from the audio IF oscillator (junction of R84 and C53) and from the emitter of Q16. If there is no signal, check the bias voltages of Q15 and Q16 and compare with the voltages shown on the schematic diagram.

2. No Modulation

Check that baseband audio is being supplied to J1. Turn audio deviation control R67 clockwise to see if the audio overdeviation lamp lights. If the lamp does not light, use an oscilloscope to probe for audio at the outputs of operational amplifiers U2A and U2B. The dc level at the outputs of U2A and U2B should be approximately 10 volts.

3. Loss of Lock

If the audio IF carrier frequency is not correct (41.25 MHz — 46.75 MHz for a spectrum-inverted unit) the modulator has lost lock. Check the position of P1. For a standard 41.25 MHz unit, P1 should be in the upper position. For a spectrum-inverted unit, P1 should be in the lower position.

Using a 100 MHz oscilloscope, probe pin 2 of U4. The signal should be a square wave at a frequency of 2.58 MHz for a standard unit or 2.92 MHz for a spectrum-inverted unit. The signal should be between 4 and 5 volts peak-to-peak, with an average dc level of 5 volts. If this signal is not present, probe pin 8 of U4, with the oscilloscope set for dc coupling. The signal should have a maximum level of at least 2.0 volts. If these requirements are not met, check the bias voltages on Q15 and Q16, and compare with the voltages shown on the schematic diagram.

SECTION 6
ALIGNMENT

6.1 GENERAL

This section includes information required to properly align the 6330. Alignment should not be undertaken unless a repair has been made or unless the modulator is known to require alignment. Even then, alignment should not be undertaken unless required test equipment, properly calibrated, is available. The person attempting alignment should be thoroughly familiar with the theory of operation of the module.

6.2 TEST EQUIPMENT

Each section below includes a list of equipment required for a specific alignment procedure. Equipment model numbers are not specified; however, the significant performance requirements are specified. The person attempting alignment is responsible for assuring that his equipment is capable of performing as required.

6.3 IF MODULATOR ADJUSTMENTS

The procedures outlined below assume that the IF board output filter has previously been tuned. If this is not the case, it may be tuned for optimum return loss using a network analyzer or a sweep set-up. The audio IF oscillator must first be disabled by placing a jumper across L10 (or by reinserting W5) and the video IF oscillator must be disabled by detuning L4. The 75 ohm output return loss may then be tuned by adjusting L13, L14, and C64. Connect the network analyzer to J9 and adjust these components for a return loss of at least 17 dB (VSWR = 1.35) from 41 to 47 MHz.

6.3.1 Video Modulator Adjustments

Equipment Required:

- Spectrum analyzer or signal level meter
- Frequency counter capable of counting up to 50 MHz
- Oscilloscope - 100 MHz.

Refer to figure 6-1 which shows the locations of adjustments and test points on the IF modulator board.

6.3.1.1 45.75 MHz Oscillator

Step 1. Disable the audio IF oscillator by placing a jumper across L10 (or by reinserting W5).

Step 2. Connect a spectrum analyzer or a signal level meter to IF output J9.

Step 3. Adjust L4 to start the oscillator and peak the amplitude. Use a frequency counter to count the frequency: it should be 45.75 MHz ±1 kHz, or 42.25 MHz ±1 kHz for a spectrum-inverted unit.

6.3.1.2 IF Carrier Level

Step 1. Set R24 to maximum counterclockwise.

Step 2. Connect a spectrum analyzer or a signal level meter to IF output J9. Do not apply video modulation.

Step 3. Set R36, the carrier level control, for a -5 dBm (+44 dBmV) output at 45.75 MHz.

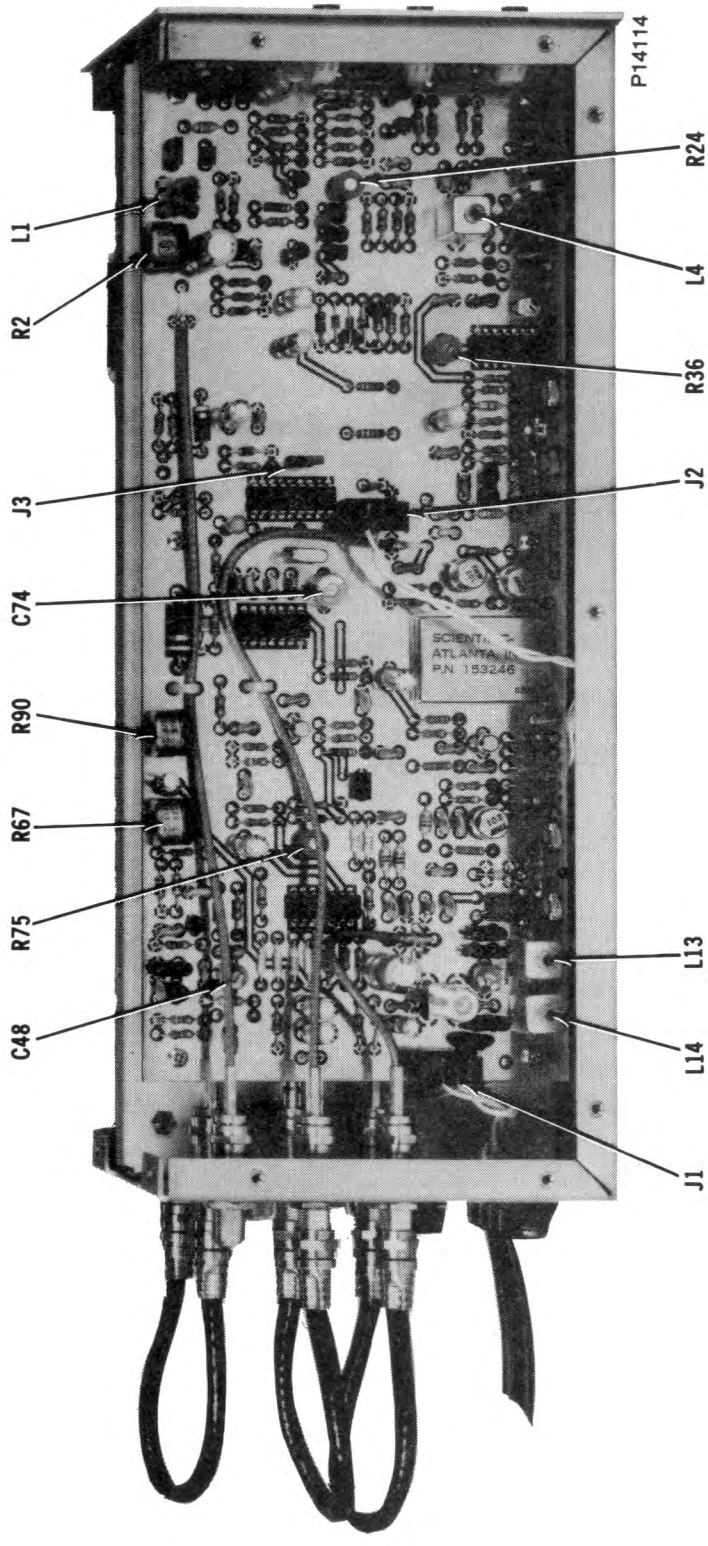


Figure 6-1. IF Modulator Adjustment and Test Point Locations

6.3.1.3 Modulator Balance/White Level Clipper

Step 1. Feed a ramp video signal with no subcarrier into J16 (video input) at approximately 1 volt peak-to-peak.

Step 2. Connect a high frequency oscilloscope to IF output connector J9, using a 75 ohm feed through terminator at the oscilloscope input.

Step 3. Set R2 (modulation depth) to maximum clockwise, R24 (white clip level) to maximum conuterclockwise. Set oscilloscope time base to 10 μs/div.

Step 4. Adjust the oscilloscope vertical sensitivity so that the signal occupies 6 major divisions peak-to-peak.

Step 5. Adjust balance capacitor C18 for the sharpest crossover of the ramp. The oscilloscope display should be similar to that shown in figure 6-2.

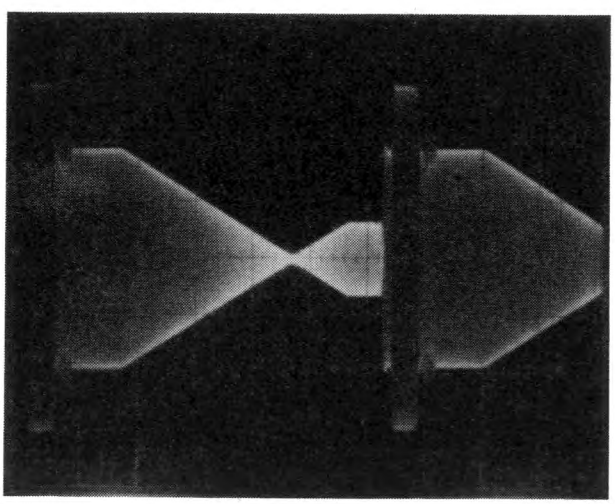


Figure 6-2. Video Modulator Balance Adjustment Waveform

Step 6. Set white clip level pot R24 so that the signal does not cross over and has a minimum amplitude of approximately two small divisions, as shown in figure 6-3. The white clip lamp should be illuminated. The modulator is now set to clip at 94% depth of modulation.

Step 7. Remove the jumper from L10 to allow the audio subcarrier oscillator to restart.

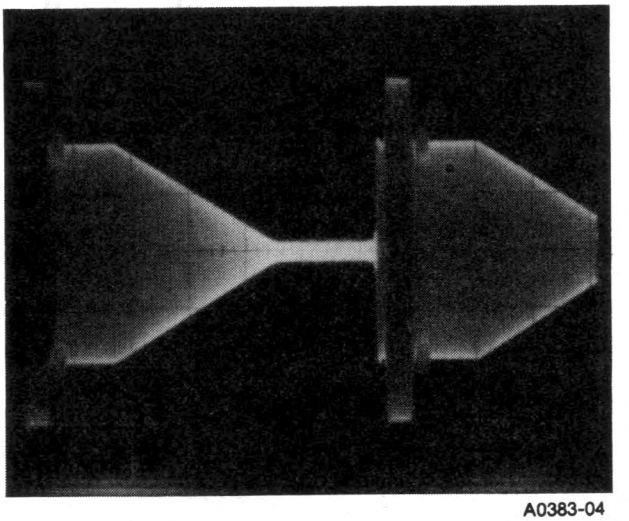


Figure 6-3. Video Modulator White Clip Level Adjustment Waveform

6.3.2 Audio Modulator Adjustments

Equipment required:

- Frequency counter capable of counting up to 50 MHz
- Spectrum analyzer or signal level meter
- Audio Generator.

Refer to figure 6-4 which shows the locations of adjustments and test points on the IF modulator board.

6.3.2.1 Audio IF Oscillator

Step 1. Set jumper P1 to the upper (lower for spectrum-inverted unit) position. Do not apply audio modulation.

Step 2. Connect a frequency counter to either lead of R91 using a high-impedance probe. Connect the probe's ground clip to the chassis. Temporarily reconnect jumper W4.

Step 3. Adjust C48 for a frequency of 41.25 MHz (46.75 MHz for spectrum-inverted unit) ±10 kHz. If the counter cannot measure the frequency, try increasing the subcarrier level by turning R90 clockwise.

Step 4. Cut jumper W4 and wait until the frequency stabilizes. Adjust C74 until the counter indicates 41.25 MHz (46.75 MHz for spectrum-inverted unit) ±500 Hz.

NOTE

To set the audio subcarrier frequency most accurately, feed the composite IF output from J9 into a demodulator such as the Scientific-Atlanta Model 6250. Use a frequency counter to measure the frequency of the demodulator's subcarrier output. Adjust C74 until the counter reads 4.5 MHz ±500 Hz.

6.3.2.2 Audio IF Carrier Level

Step 1. Connect a spectrum analyzer or a signal level meter to IF output J9. If a signal level meter is used, disable the video IF oscillator by placing a finger across the leads of Q9.

Step 2. Set R90 for an audio IF carrier level of -20 dBm (29 dBmV).

6.3.2.3 Deviation Control/Overdeviation Indicator

Step 1. Connect an audio generator to the audio input, J1-1 and J1-3. Set frequency to 10 kHz and amplitude to 0 dBm.

Step 2. Connect a spectrum analyzer to J9. Set scan width = 20 kHz, BW = 3 kHz, sweep time = 5 ms.

Step 3. Adjust deviation control R67 to null the carrier. Turn R75 counterclockwise until the overdeviation lamp just begins to glow.

6.4 OUTPUT CONVERTER ADJUSTMENTS

6.4.1 Equipment Required:

- Directional coupler
- Sweep generator
- Spectrum Analyzer
- Frequency counter capable of counting up to 350 MHz.

Refer to figure 6-4 which shows the locations of adjustments and test points on the Output Converter board.

6.4.2 Local Oscillator Adjustment

The first step in aligning the output converter is to align the crystal oscillator. This is done by routing the oscillator output to TP-1 through the proper placement of the test point jumper P1. This signal should be applied to a calibrated spectrum analyzer. With the proper supply voltage applied, inductor L16 should be adjusted until a signal at or near the frequency of interest appears. Refer to table 5-1 for the proper local oscillator frequency for the channel of unit being aligned. At this point L10, L12, L14 and C37 should be adjusted for maximum signal output level. For channels 7 through 13 and A through W, C41 and C45 should be adjusted to remove any fundamental component in the output signal. Variable components L10, L12, L14 and C37 should be readjusted to peak the output signal level. The output of the oscillator should then be connected to a frequency counter to determine if the frequency is within specification (8 kHz for channels 2-13 and A-Z and 10 kHz for channels J-W). If it is not, L16 should be adjusted until the frequency specification is met. The output power level should then be rechecked

on the spectrum analyzer to see that it is greater than +7 dBm and that all spurious signals are greater than 60 dB below the oscillator output. The test point jumper should then be changed so that the local oscillator signal is injected into the mixer.

6.4.3 Filter Adjustment

The first filter to be adjusted consists of L1, L2 and C7 through C13 following the mixer U1. Adjust it so that its return loss looking back into the filter at TP2 is greater than 16.5 dB over the 6 MHz channel bandwidth. The same process is repeated for the other two double tuned circuits proceeding towards the output. Each filter section must be jumpered back into the circuit after it has been aligned. For channels 2 through 4 the slug in L7, the IF trap, must be screwed all the way in before the output filter is aligned.

6.4.4 Overall Output Adjustment

The composite IF signal can now be applied to the IF input and the output of the output converter observed on the spectrum analyzer. The video carrier should be set at 60 dBmV using the front panel level control and the sound carrier should be set 15 dB below this point by adjusting R90 on the IF modulator. For channels 2 through 4, L7 of the IF trap should be adjusted to minimize the IF present at the output. If no IF can be observed, the slug should be screwed all the way into the coil form. All spurious signals should be observed to be 60 dB below the video carrier. The IF attenuator should now be reduced to its minimum level and the output should decrease by at least 10 dB. This completes the alignment procedure.

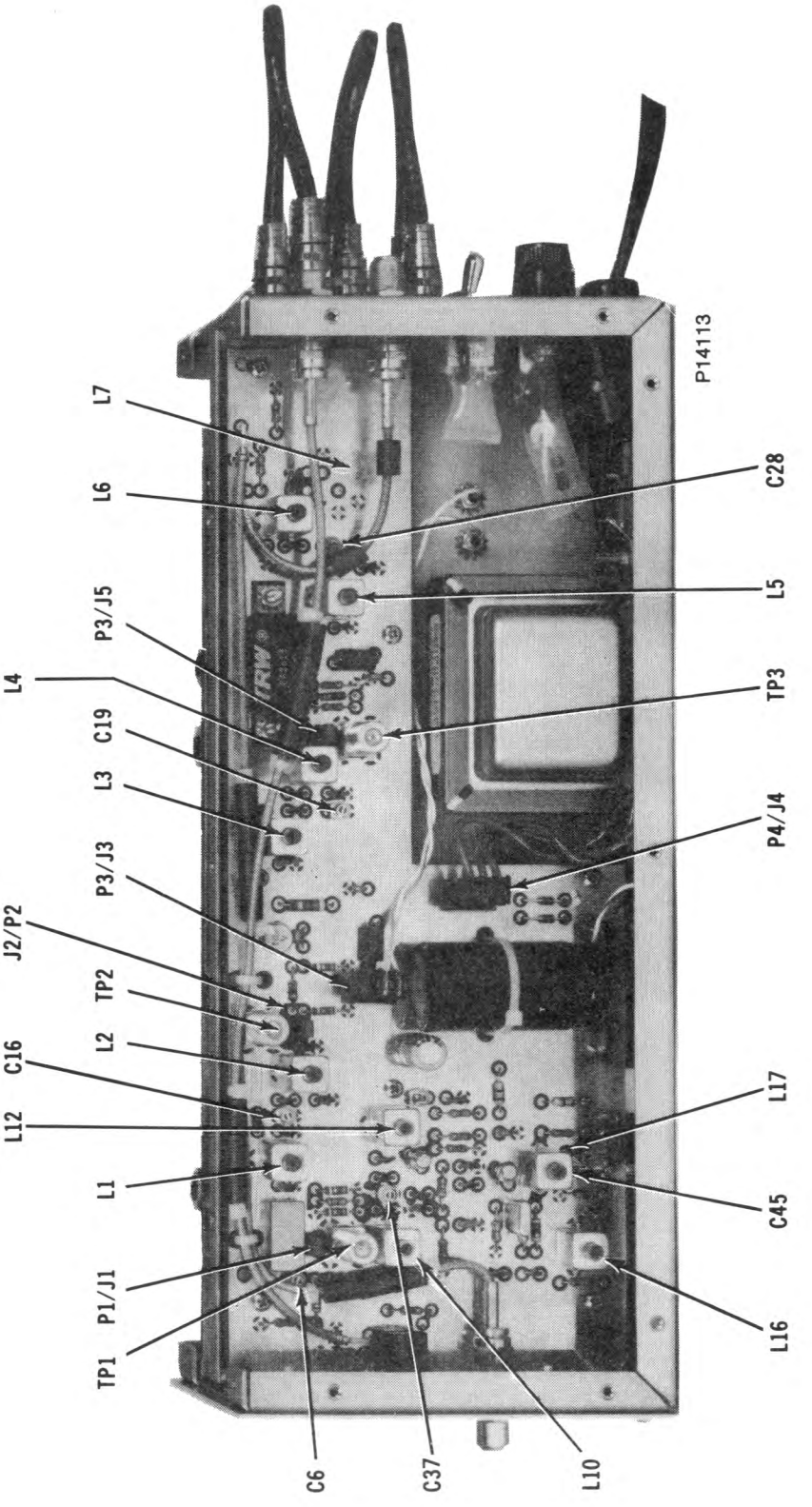


Figure 6-4. Output Converter Adjustment and Test Point Locations

SECTION 7
PARTS LISTS

7.1 INTRODUCTION

This section contains the parts lists for the assembly drawings contained in section 8.

7.2 EXPLANATION OF COLUMN HEADINGS

REF DESIG:	This is the components designation that appears on the schematic diagram for that unit.
PART NO.:	The Scientific-Atlanta part number is listed in this column.
DESCRIPTION:	A brief electrical or mechanical description is given in this column.
VENDOR:	A vendor code assigned by Scientific-Atlanta is given in this column. A cross-reference of these codes to manufacturers appears at the end of this section.
VENDOR PART NUMBER:	The number assigned to the part by the manufacturer is listed in this column.

7.3 HOW TO ORDER PARTS

When ordering parts from Scientific-Atlanta, always include the S-A part number, part description, unit serial number, unit name, sub-assembly name, part manufacturer, and manufacturer's part number.

7.4 PARTS LISTS INCLUDED

The following parts lists are included in this section:

Table	Part No.	Figure Reference	Description
7-1	275254	8-2	Assembly, Rack Adapter 1 Receiver, 1 Modulator
7-2	275255	8-2	Assembly, Rack Adapter 1 Receiver, 2 Modulators
7-3	275256	8-2	Assembly, Rack Adapter 0 Receivers, 4 Modulators
7-4	275257	8-2	Assembly, Rack Adapter 0 Receivers, 3 Modulators
7-5	275258	8-2	Assembly, Rack Adapter 0 Receivers, 2 Modulators
7-6	275259	8-2	Assembly, Rack Adapter 0 Receivers, 1 Modulator
7-7	277400 - 277434	8-3	Assembly, 6330 Modulator, Channels 2-13 and A-W
7-8	275227	8-4	Assembly, Chassis 6330 Modulator
7-9	275240	8-6	Assembly, PWB 6330 IF Modulator
7-10	277440 - 277474	8-8	Assembly, Output Converter Channels 2-13 and A-W
7-11	277560	8-8	Common Parts, Channels 2-13 and A-W
7-12	277561	8-8	Frequency Select Components, Channels 2-4, Output Converter
7-13	277562	8-8	Frequency Select Components, Channels 5-6, Output Converter

Table	Part No.	Figure Reference	Description
7-14	277563	8-8	Frequency Select Components, Channels A-F, Output Converter
7-15	277564	8-8	Frequency Select Components, Channels G-I and 7-10, Output Converter
7-16	277565	8-8	Frequency Select Components, Channels 11-13 and J-L, Output Converter
7-17	277566	8-8	Frequency Select Components, Channels M-R Output Converter
7-18	277567	8-8	Frequency Select Components, Channels S-W, Output Converter
7-19	275247	8-6	Spectrum Inversion Accessory Kit
7-20	275248	8-6	DIFLA Accessory Kit
7-21	275249	8-6	DIFLB Accessory Kit

TECHNICAL MANUAL PARTS LIST

PART# 0275254ENG EN/RV DESCRIPTION: ASSY, RACK ADAPTER 6330/6650 1REC 1MOD

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0233374		ASSY DUAL RACK ADAPTER			1.	
002	0275233	A	RETAINING STRIP, RACK ADAPTER 6330 6650			1.	
003	0233530		ASSY SERIES 6650 RECEIVER			1.	
004	0275232		6330 MOD ASSY 277400 THRU 277434 CHAN SE			1.	
005	0275253		PANEL BLANK 6330			1.	
006	0072309		SCREW 4-40 X 3/16 PAN HD,SST	XZ	PER MS51957-12	8.	

Table 7-1. Assembly, Rack Adapter
1 Receiver, 1 Modulator

TECHNICAL MANUAL PARTS LIST

PART# 0275255ENG EN/RV DESCRIPTION: ASSY, RACK ADAPTER 6330/6330 1REC 2MOD

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0233374		ASSY DUAL RACK ADAPTER			1.	
002	0275233	A	RETAINING STRIP, RACK ADAPTER 6330 6650			1.	
003	0233530		ASSY SERIES 6650 RECEIVER			1.	
004	0275232		6330 MOD ASSY 277400 THRU 277434 CHAN SE			2.	
005	0078600		NOT ASSIGNED			.	
006	0072309		SCREW 4-40 X 3/16 PAN HD,SST	XZ	PER MS51957-12	4.	

Table 7-2. Assembly, Rack Adapter
1 Receiver, 2 Modulators

TECHNICAL MANUAL PARTS LIST

PART# 0275256ENG EN/RV DESCRIPTION: ASSY, RACK ADAPTER 6330/6650 1REC 4MOD

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0233374		ASSY DUAL RACK ADAPTER			1.	
002	0275234		RETAINING STRIP, RACK ADAPTER 6330			1.	
003	0078600		NOT ASSIGNED			.	
004	0275232		6330 MOD ASSY 277400 THRU 277434 CHAN SE			4.	
005	0078600		NOT ASSIGNED			.	
006	0072309		SCREW 4-40 X 3/16 PAN HD,SST	XZ	PER MS51957-12	4.	

Table 7-3. Assembly, Rack Adapter
0 Receivers, 4 Modulators

TECHNICAL MANUAL PARTS LIST

PART# 0275257ENG EN/RV DESCRIPTION: ASSY, RACK ADAPTER 6330/6650 0REC 3MOD

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0233374		ASSY DUAL RACK ADAPTER			1.	
002	0275234		RETAINING STRIP, RACK ADAPTER 6330			1.	
003	0078000		NOT ASSIGNED			.	
004	0275232		6330 MOD ASSY 277400 THRU 277434 CHAN SE			3.	
005	0275253		PANEL BLANK 6330			1.	
006	0072309		SCREW 4-40 X 3/16 PAN HD,SST	XZ	PER MS51957-12	8.	

Table 7-4. Assembly, Rack Adapter
0 Receivers, 3 Modulators

TECHNICAL MANUAL PARTS LIST

PART# 0275258ENG EN/RV DESCRIPTION: ASSY, RACK ADAPTER 6330/6650 0REC 2MOD

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0233374		ASSY DUAL RACK ADAPTER			1.	
002	0275234		RETAINING STRIP, RACK ADAPTER 6330			1.	
003	0078600		NOT ASSIGNED			.	
004	0275232		6330 MOD ASSY 277400 THRU 277434 CHAN SE			2.	
005	0275253		PANEL BLANK 6330			2.	
006	0072309		SCREW 4-40 X 3/16 PAN HD,SST	XZ	PER MS51957-12	12.	

Table 7-5. Assembly, Rack Adapter
0 Receivers, 2 Modulators

TECHNICAL MANUAL PARTS LIST

PART# 0275259ENG EN/RV DESCRIPTION: ASSY, RACK ADAPTER 6330/6650 OREC 1MOD

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0233374		ASSY DUAL RACK ADAPTER			1.	
002	0275234		RETAINING STRIP, RACK ADAPTER 6330			1.	
003	0078600		NOT ASSIGNED			.	
004	0275232		6330 MOD ASSY 277400 THRU 277434 CHAN SE			1.	
005	0275253		PANEL BLANK 6330			3.	
006	0072309		SCREW 4-40 X 3/16 PAN HD,SST	XZ	PER MS51957-12	16.	

Table 7-6. Assembly, Rack Adapter
0 Receivers, 1 Modulator

Table 7-7. Assembly, 6330 Modulator
Channels 2-13 and A-W

DWG NO. PL 277400-434 | SH 2 | REV

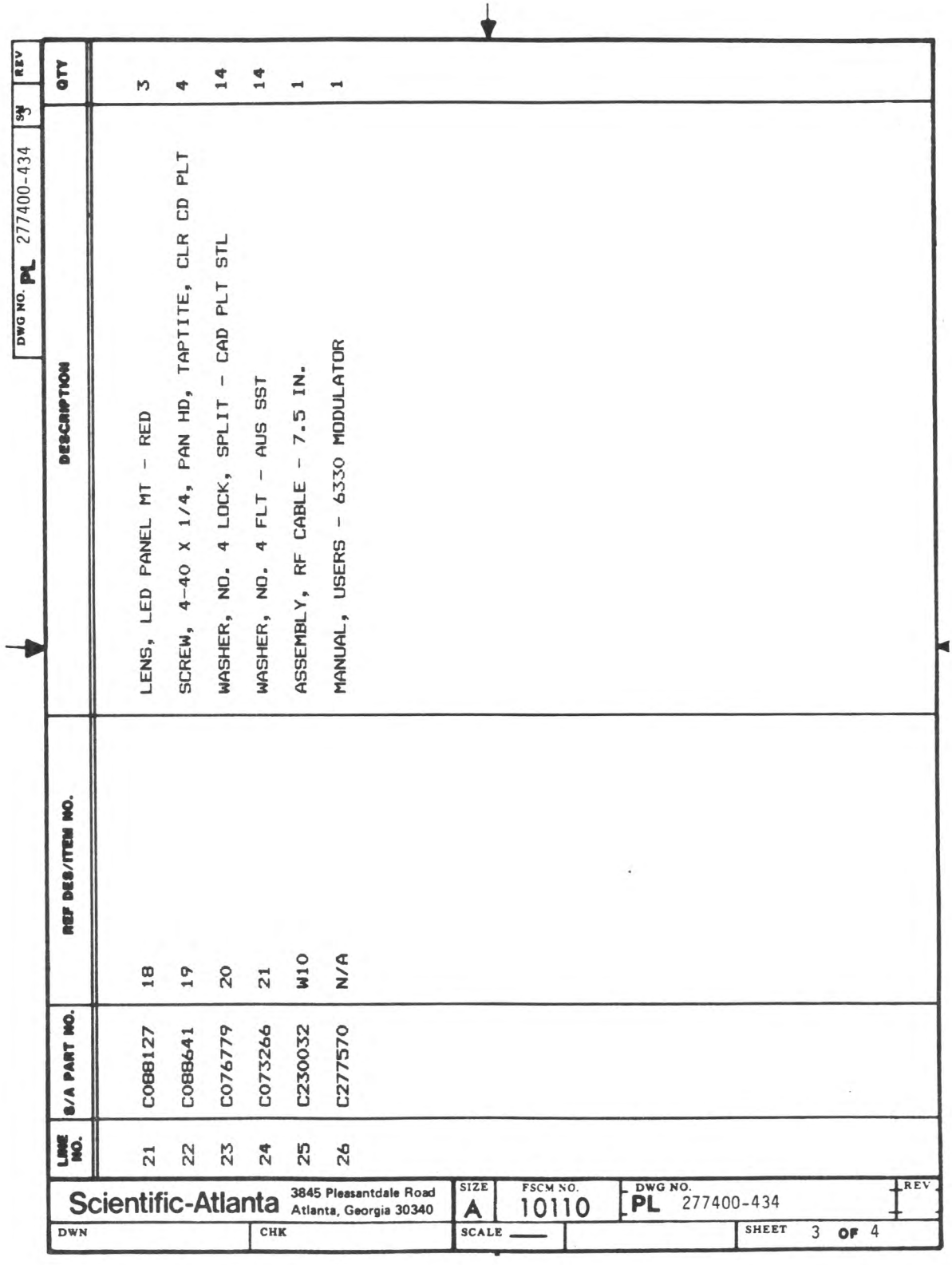
LINE NO.	S/A PART NO.	REF DES/ITEM NO.	DESCRIPTION	QTY
1	C275220	N/A	ASSEMBLY, 6330 MODULATOR	0
2	C275236	N/A	TEST PROCEDURE, 6330 MODULATOR	0
3	C275237	N/A	TEST SPECIFICATIONS, 6330 MODULATOR	0
4	C275227	1	ASSEMBLY, CHASSIS - 6330 MODULATOR	1
5	C275240	2	ASSEMBLY, 6330 IF MODULATOR	1
6	TABLE 1	3	ASSEMBLY, 6330 OUTPUT CONVERTER - SEE TABLE 1	1
7	C275226	4	SPACER, HYBRID	1
8	C275235	5	LABEL, MODEL/SERIAL NUMBER	1
9	C275239	6	LABEL, CAUTION - HAZARD	1
10	C083438	7	SCREW, 4-40 X 3/16 PAN HD, CAD PLT STL	21
11	C036148	8	WASHER, 3/8 FOR RF CONNECTORS	5
12	C076877	9	NUT, 3/8-32 HEX, POT MTG, BRASS, NI PLT	5
13	C076424	10	PLUG, HOLE 3/8 DIA HOLE NI PLT STL	4
14	C275223	11	COVER, TOP	1
15	C072317	12	SCREW, 4-40 X 3/8 PAN HD, SST	14
16	C073270	13	WASHER, FLAT NO. 6, AUS, SST	2
17	C073268	14	WASHER, NO. 6 LOCK, SPLIT, CAD PLT STL	2
18	C075446	15	NUT, 6-32 UNC-2B, PLAIN-HEX, SST	2
19	TABLE 1	16	DECAL, FRONT PANEL - SEE TABLE 1	1
20	C275224	17	PANEL, FRONT - 6330 MODULATOR	1

DWN | CHK

Scientific-Atlanta
3845 Pleasantdale Road
Atlanta, Georgia 30340

SIZE A | SCALE —— | FSCM NO. 10110 | DWG NO. PL 277400-434 | SHEET 2 OF 4 | REV

Table 7-7. Assembly, 6330 Modulator - continued
Channels 2-13 and A-W



DWG NO. PL 277400-434	SH	REV

LINE NO.	S/A PART NO.	REF DES/ITEM NO.	DESCRIPTION	QTY
21	C088127	18	LENS, LED PANEL MT - RED	3
22	C088641	19	SCREW, 4-40 X 1/4, PAN HD, TAPTITE, CLR CD PLT	4
23	C076779	20	WASHER, NO. 4 LOCK, SPLIT - CAD PLT STL	14
24	C073266	21	WASHER, NO. 4 FLT - AUS SST	14
25	C230032	W10	ASSEMBLY, RF CABLE - 7.5 IN.	1
26	C277570	N/A	MANUAL, USERS - 6330 MODULATOR	1

Scientific-Atlanta 3845 Pleasantdale Road Atlanta, Georgia 30340	SIZE A	FSCM NO. 10110	DWG NO. PL 277400-434	REV
DWN	CHK	SCALE —		SHEET 3 OF 4

Table 7-7. Assembly, 6330 Modulator - continued
Channels 2-13 and A-W

27/400-434 4

TABLE 1

CHANNEL	TOP ASSY NO.	ITEM 3 PART NO.	ITEM 16 PART NO.
2	277400	277440	277520
3	277401	277441	277521
4	277402	277442	277522
5	277403	277443	277523
6	277404	277444	277524
7	277405	277445	277525
8	277406	277446	277526
9	277407	277447	277527
10	277408	277448	277528
11	277409	277449	277529
12	277410	277450	277530
13	277411	277451	277531
A	277412	277452	277532
B	277413	277453	277533
C	277414	277454	277534
D	277415	277455	277535
E	277416	277456	277536
F	277417	277457	277537
G	277418	277458	277538
H	277419	277459	277539
I	277420	277460	277540
J	277421	277461	277541
K	277422	277462	277542
L	277423	277463	277543
M	277424	277464	277544
N	277425	277465	277545
O	277426	277466	277546
P	277427	277467	277547
Q	277428	277468	277548
R	277429	277469	277549
S	277430	277470	277550
T	277431	277471	277551
U	277432	277472	277552
V	277433	277473	277553
W	277434	277474	277554

Scientific-Atlanta 3845 Pleasantdale Road Atlanta, Georgia 30340	SIZE A	FSCM NO. 10110	DWG NO. PL 277400-434	REV
DWN	CHK	SCALE		SHEET 4 of 4

TECHNICAL MANUAL PARTS LIST

PART# 0275227ENG FN/RV DESCRIPTION: ASSEMBLY, CHASSIS 6330 MODULATOR

REF DESIG	PART NO.	FN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0275221	B	CHASSIS, 6330 MODULATOR			1.	
002	0275222		PLATE SUPPORT, 6330 MODULATOR			1.	
003	0233350	A	POWER CORD			1.	
004	0170837		CLAMP PWR CORD STR-THRU .20X.37 CBL	HEY	1170	1.	
005	0082640		HEAT SINK COMPOUND, SILICONE	DOW	340	.	
006	0278955		LABEL, CAUTION-FUSE			1.	
007	0170739		SCREW 4-40 X 1/4 F HD 100 DEG TAPTITE	CSM	BY DESCRIPTION CD PLT	5.	
008	0077322		SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	CS	BY DESCRIPTION	2.	72228
009	0078990		SCREW 4-40 X 3/8 F HD,100 DEG,SST	XZ	PER MS24693-C4	1.	
010	0072329		SCREW 4-40 X 7/16 PAN HD,SST	XZ	PER MS51957-16	2.	
011	0073266		WASHER-NO. 4- .125 .250 .022 AUS SST	XZ	ANSI B18.22.1	3.	
012	0073265		WASHER NO. 4 LOCK, EXT TOOTH, CAD PL STL	XZ	ANSI B18.21.1	1.	
013	0071494		NUT 4-40 UNC-2B,PLAIN-HEX,SST	XZ	PER MS35649-244	1.	
014	0076779		WASHER NO. 4 LOCK, SPLIT, CAD PLT STL	XZ	ANSI B18.21.1	2.	
015	0073272		WASHER-NO. 8- .188 .375 .049 AUS SST	XZ	ANSI B18.22.1	5.	
016	0073271		WASHER NO. 8 LOCK, EXT TOOTH, CAD PL STL	XZ	ANSI B18.21.1	2.	
017	0076555		WASHER NO 8, SPLIT, CAD PLT STL			2.	
018	0073014		TERMINAL GND INT TOOTH NO8 ANGLED	SH	1416-8	1.	83330
019	0071500		NUT 8-32 UNC-2B,SM PATT 1/4 HEX,SST	XZ	BY DESCRIPTION	5.	
020	0278422		TUBING,HEAT SHRINK-.75TO.375,BLK,UL MARK			.125	
021	0278422		TUBING,HEAT SHRINK-.75TO.375,BLK,UL MARK			.177	
022	0275312		BUTTON, RACK SLIDE			4.	
023	0275347		CHASSIS INSPECTION LABEL			1.	
A 003	0275229		ASSEMBLY TRANSFORMER			1.	
C 001	0088146		FILTER EMI FEEDTHRU 100V 15A 8-32 MOUNT	AMP	859618-1	1.	
C 002	0088146		FILTER EMI FEEDTHRU 100V 15A 8-32 MOUNT	AMP	859618-1	1.	
E 001	0085677		CORE BEAD FERRITE 7D .375X.187X .500L			1.	
E 002	0085677		CORE BEAD FERRITE 7D .375X.187X .500L			1.	
E 003	0085677		CORE BEAD FERRITE 7D .375X.187X .500L			1.	
E 004	0085677		CORE BEAD FERRITE 7D .375X.187X .500L			1.	
E 005	0081977		CORE BEAD FERRITE 7D .260X.125X.375L	STK	57-1555	1.	
E 006	0081977		CORE BEAD FERRITE 7D .260X.125X.375L	STK	57-1555	1.	
F 001	0278423		FUSE, 3/8A 250V SLOW BLOW	SAV	SD4-3/8A	1.	
R 001	0072208		RESISTOR 2.2 MEG 1/2W 10% COMP	AB	RCR20G225KS	1.	01121
S 001	0170782		SWITCH TOG DPDT SOLDER TERM	AEP	MTG-206N	1.	
VR001	0170719		IC VLTG RGLTR POS 18V 1.0A TYP TO220	MOS	MC7818ACT	1.	
W 001	0275230		ASSEMBLY, TERMINAL STRIP			1.	
W 002	0275231		ASSEMBLY, CABLE 7.50 IN			1.	
W 003	0275231		ASSEMBLY, CABLE 7.50 IN			1.	

Table 7-8. Assembly, Chassis 6330 Modulator

Table 7-8. Assembly, Chassis 6330 Modulator - continued

TECHNICAL MANUAL PARTS LIST

PART# 0275227ENG EN/RV DESCRIPTION: ASSEMBLY, CHASSIS 6330 MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
* 004	0230893		WIRE 20 GA WHITE BUNCH TINNED			.25	
XF001	0071249		FUSE HLDR PNL MT FOR 3AG OR 3AB	BUS	HKP	1.	71400

TECHNICAL MANUAL PARTS LIST

PART# 0275240ENG EN/RV DESCRIPTION: ASSY PWB 6330 IF MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0275241	A	PWB, IF MODULATOR, 6330			1.	
002	0081976		SHIELD CAN BRASS .19 DIA HOLE CAD PLATED	STX	307A-40 & DESCRIPTION	3.	
003	0079335		PAD TRANSSTR TO5 & TO18 TO TO5	THC	7717-44-DAP	1.	13103
004	0073045		CABLE TIE - MINIATURE - 4 IN. LONG	PAN	SST1M	1.	06383
005	0231832		SPACER, LED			3.	
006	0171711		SPACER, H=.150IN, ID=.147IN, OD=.250IN			3.	
0000	0275242	A	SCHEMATIC,IF MODULATOR			.	
0000	0275243		TEST PROCEDURE IF MODULATOR			.	
0000	0275244		TEST SPECIFICATION IF MODULATOR			.	
0000	0275247		SPECTRUM INVERTION ACCESSORY KIT			.	
0000	0275248		DIFLA ACCESSORY KIT			.	
0000	0275249		DIFLB ACCESSORY KIT			.	
C 001	0089866		CAPACITOR 100MF 25V			1.	
C 002	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 003	0274483		CAPACITR 470 PF 50V CER MONO COG 1%			1.	
C 004	0274486		CAPACITR .0047 MF 50V CER MONO COG 1%			1.	
C 005	0274482		CAPACITR 360 PF 50V CER MOMO COGO 1%			1.	
C 006	0274483		CAPACITR 470 PF 50V CER MONO COG 1%			1.	
C 007	0274483		CAPACITR 470 PF 50V CER MONO COG 1%			1.	
C 008	0089866		CAPACITOR 100MF 25V			1.	
C 009	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 010	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 011	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 012	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 013	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 014	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 015	0274445		CAPACITR 300 PF 50V CER MONO COG 5%			1.	
C 016	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 017	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 018	0087125		CAPACITR 3.3-18 PF NIN CER PC MT	SP	GKU 18000	1.	
C 019	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 020	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 021	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 022	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 023	0274408	D	CAPACITR 47 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274408	1.	
C 024	0274433		CAPACITR 91 PF 50V CER MONO COG 5%			1.	
C 025	0274408	D	CAPACITR 47 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274408	1.	
C 026	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 027	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 028	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 029	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 030	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 031	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 032	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 033	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 034	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 035	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 036	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 037	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	

Table 7-9. Assembly, PWB 6330 IF Modulator - continued

TECHNICAL MANUAL PARTS LIST

PART# 0275240ENG EN/RV DESCRIPTION: ASSY PWB 6330 IF MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 038	0274502		CAPACITR 470 PF 50V CER DISC Y5P 10%			1.	
C 039	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 040	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 041	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 042	0278420		CAPACITOR, 2.2MT 50V, TAPE & REEL			1.	
C 043	0278420		CAPACITOR, 2.2MT 50V, TAPE & REEL			1.	
C 044	0274487		CAPACITR .0051 MF 50V CER MONO COG 1%			1.	
C 045	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 046	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 047	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 048	0088690		CAPACITR 3.5-13 PF MIN PC MT			1.	
C 049	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 050	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 051	0274445		CAPACITR 300 PF 50V CER MONO COG 5%			1.	
C 052	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 053	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 054	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 055	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 056	0274414	D	CAPACITR 82 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274414	1.	
C 057	0274436		CAPACITR 120 PF 50V CER MONO COG 5%			1.	
C 058	0274414	D	CAPACITR 82 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274414	1.	
C 059	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 060	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 061	0274412	D	CAPACITR 68 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274412	1.	
C 062	0274412	D	CAPACITR 68 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274412	1.	
C 063	0274436		CAPACITR 120 PF 50V CER MONO COG 5%			1.	
C 064	0170684		CAPACITR 5-50 PF MIN CER PC MT	ER	EAB-CP50A	1.	
C 065	0274412	D	CAPACITR 68 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274412	1.	
C 066	0274412	D	CAPACITR 68 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274412	1.	
C 067	0274507		CAPACITR .0015 MF 50V CER DISC Y5P 10%			1.	
C 068	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 069	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 070	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 071	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 072	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 073	0274434		CAPACITR 100 PF 50V CER MONO COG 5%			1.	
C 074	0170669		CAPACITR 15-60 PF MIN CER DISC PC MT	ER	538-037-F 15-60	1.	
C 075	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 076	0274559		CAPACITR .47 MF 50V CER MONO X7R 10%			1.	
C 077	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 078	0231485		CAPACITOR, 10 MF ALUM ELEC			1.	
C 079	0089868		CAPACITOR 100MF 25V			1.	
C 080	0089866		CAPACITOR 100MF 25V			1.	
C 081	0089868		CAPACITOR 100MF 25V			1.	
C 082	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 083	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	
C 084	0274551		CAPACITR .10 MF 50V CER MONO X7R 10%			1.	

TECHNICAL MANUAL PARTS LIST

PART# 0275240ENG EN/RV DESCRIPTION: ASSY PWB 6330 IF MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
CR001	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154	1.	80368
CR002	0078763		DIODE 1N4740A SI ZEN 10V 5% 1W	MOS	1N4740A	1.	04713
CR003	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154	1.	80368
CR004	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154	1.	80368
CR005	0078714		DIODE 1N4744A SI ZEN 15V 5% 1W	MOS	1N4744A	1.	04713
CR006	0078763		DIODE 1N4740A SI ZEN 10V 5% 1W	MOS	1N4740A	1.	04713
CR007	0085003		DIODE MV209 VARACTOR SIL RADIAL LEADS	MOS	MV209	1.	
CR008	0076705		DIODE 1N4733A SI ZEN 5.1V 5% 1W	MOS	1N4733A	1.	04713
CR009	0078763		DIODE 1N4740A SI ZEN 10V 5% 1W	MOS	1N4740A	1.	04713
CR010	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154	1.	80368
CR011	0071142		DIODE 1N4154 SIL 25V 150MA	SY	1N4154	1.	80368
DS001	0170733		LAMP LED RED .185 DIA .313 LNG 2.4V 20MA	HP	5082-4650	1.	
DS002	0170733		LAMP LED RED .185 DIA .313 LNG 2.4V 20MA	HP	5082-4650	1.	
DS003	0170733		LAMP LED RED .185 DIA .313 LNG 2.4V 20MA	HP	5082-4650	1.	
E 003	0081718		CORE BEAD FERRITE 7D .138X.037X.150L GRN	STK	57-1413	1.	78488
E 004	0081718		CORE BEAD FERRITE 7D .138X.037X.150L GRN	STK	57-1413	1.	78488
FL001	0153246		SAW FILTER			1.	
J 001	0171729		CONN HEADER SGL ROW STRAIGHT 3-PIN PC	PAN	HPSS156-3	1.	
J 002	0171729		CONN HEADER SGL ROW STRAIGHT 3-PIN PC	PAN	HPSS156-3	1.	
J 003	0087366		CONN HEADER SGL ROW STRAIGHT 3-PIN PC			1.	
J 009	0233819		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 016	0233819		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
L 001	0275245		INDUCTOR, TAPPED			1.	
L 002	0082594		INDUCTOR 5.6 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	
L 003	0078046		INDUCTOR 3.3 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 004	0145349		INDUCTOR, 9.5T #24 6-32X3/8 INCH CARB J			1.	
L 005	0079141		INDUCTOR 1.8 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 006	0078046		INDUCTOR 3.3 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 007	0079167		INDUCTOR .33 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 008	0079167		INDUCTOR .33 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 009	0078046		INDUCTOR 3.3 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 010	0079167		INDUCTOR .33 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 011	0079330		INDUCTOR .22 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 012	0079330		INDUCTOR .22 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 013	0145353		INDUCTOR 13.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 014	0145353		INDUCTOR 13.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 015	0077954		INDUCTOR .47 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
P 001	0086684		JUMPER FEMALE .10 INCH CENTERS	BGE	65474-004	1.	
Q 001	0230783		TRANSISTOR 2N3904			1.	
Q 002	0230783		TRANSISTOR 2N3904			1.	
Q 003	0232113		TRANSISTOR 2N3906			1.	

Table 7-9. Assembly, PWB 6330 IF Modulator - continued

TECHNICAL MANUAL PARTS LIST

PART# 0275240ENG EN/RV DESCRIPTION: ASSY PWB 6330 IF MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
Q 004	0230783		TRANSISTOR 2N3904			1.	
Q 005	0232113		TRANSISTOR 2N3906			1.	
Q 006	0232113		TRANSISTOR 2N3906			1.	
Q 007	0230783		TRANSISTOR 2N3904			1.	
Q 008	0230784		TRANSISTOR ,MPSA63			1.	
Q 009	0230783		TRANSISTOR 2N3904			1.	
Q 010	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179	1.	04713
Q 011	0067993		TRANSISTOR, LT1001A			1.	
Q 012	0067993		TRANSISTOR, LT1001A			1.	
Q 013	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179	1.	04713
Q 014	0067993		TRANSISTOR, LT1001A			1.	
Q 015	0230783		TRANSISTOR 2N3904			1.	
Q 016	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179	1.	04713
R 001	0089059		RESISTOR 300 OHM 1/4W 5% CARBON FILM			1.	
R 002	0171740		POT 100 OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH101M	1.	
R 003	0089106		RESISTOR 27K OHM 1/4W 5% CARBON FILM			1.	
R 004	0089090		RESISTOR 5.6K OHM 1/4W 5% CARBON FILM			1.	
R 005	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 006	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 007	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 008	0089056		RESISTOR 220 OHM 1/4W 5% CARBON FILM			1.	
R 009	0089069		RESISTOR 750 OHM 1/4W 5% CARBON FILM			1.	
R 010	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1.	
R 011	0089102		RESISTOR 18K OHM 1/4W 5% CARBON FILM			1.	
R 012	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1.	
R 013	0089142		RESISTOR 820K OHM 1/4W 5% CARBON FILM			1.	
R 014	0089080		RESISTOR 2.2K OHM 1/4W 5% CARBON FILM			1.	
R 015	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1.	
R 016	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1.	
R 017	0089090		RESISTOR 5.6K OHM 1/4W 5% CARBON FILM			1.	
R 018	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1.	
R 019	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 020	0084524		RESISTOR 1.0 MEG 1/4W 5% COMP	AB	RCR07G105JS	1.	
R 021	0089132		RESISTOR 330K OHM 1/4W 5% CARBON FILM			1.	
R 022	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1.	
R 023	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM			1.	
R 024	0082649		POT 10K OHM 1/2W CER .30 DIA VERT ADJ 4T	BLI	3339P-1-103	1.	
R 025	0089084		RESISTOR 3.3K OHM 1/4W 5% CARBON FILM			1.	
R 026	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM			1.	
R 027	0089098		RESISTOR 12K OHM 1/4W 5% CARBON FILM			1.	
R 028	0089088		RESISTOR 4.7K OHM 1/4W 5% CARBON FILM	ROM	R-25 BY DESCRIPTON	1.	
R 029	0089082		RESISTOR 2.7K OHM 1/4W 5% CARBON FILM			1.	
R 030	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1.	
R 031	0089081		RESISTOR 2.4K OHM 1/4W 5% CARBON FILM			1.	
R 032	0089093		RESISTOR 7.5K OHM 1/4W 5% CARBON FILM			1.	
R 033	0089093		RESISTOR 7.5K OHM 1/4W 5% CARBON FILM			1.	
R 034	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	

Table 7-9. Assembly, PWB 6330 IF Modulator - continued

TECHNICAL MANUAL PARTS LIST

PART# 0275240ENG EN/RV DESCRIPTION: ASSY PWB 6330 IF MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
R 035	0089078		RESISTOR 1.8K OHM 1/4W 5% CARBON FILM			1.	
R 036	0082647		POT 1K OHM 1/2W CER .30 DIA VERT ADJ 4T			1.	
R 037	0089080		RESISTOR 2.2K OHM 1/4W 5% CARBON FILM			1.	
R 038	0089100		RESISTOR 15K OHM 1/4W 5% CARBON FILM			1.	
R 039	0089093		RESISTOR 7.5K OHM 1/4W 5% CARBON FILM			1.	
R 040	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 041	0089048		RESISTOR 100 OHM 1/4W 5% CARBON FILM			1.	
R 042	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM			1.	
R 043	0089042		RESISTOR 56 OHM 1/4W 5% CARBON FILM			1.	
R 044	0089067		RESISTOR 620 OHM 1/4W 5% CARBON FILM			1.	
R 045	0089042		RESISTOR 56 OHM 1/4W 5% CARBON FILM			1.	
R 046	0089067		RESISTOR 620 OHM 1/4W 5% CARBON FILM			1.	
R 047	0089040		RESISTOR 47 OHM 1/4W 5% CARBON FILM			1.	
R 048	0089093		RESISTOR 7.5K OHM 1/4W 5% CARBON FILM			1.	
R 049	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 050	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 051	0089074		RESISTOR 1.2K OHM 1/4W 5% CARBON FILM			1.	
R 052	0089028		RESISTOR 15 OHM 1/4W 5% CARBON FILM			1.	
R 053	0089100		RESISTOR 15K OHM 1/4W 5% CARBON FILM			1.	
R 054	0089090		RESISTOR 5.6K OHM 1/4W 5% CARBON FILM			1.	
R 055	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM			1.	
R 056	0089062		RESISTOR 390 OHM 1/4W 5% CARBON FILM			1.	
R 057	0089028		RESISTOR 15 OHM 1/4W 5% CARBON FILM			1.	
R 058	0089018		RESISTOR 5.6 OHM 1/4W 5% NICKEL FILM			1.	
R 059	0089059		RESISTOR 300 OHM 1/4W 5% CARBON FILM			1.	
R 060	0089059		RESISTOR 300 OHM 1/4W 5% CARBON FILM			1.	
R 061	0078924		RESISTOR 20.0K OHM RN55C 1% MTL FLM	DP	RN55C2002F	1.	
R 062	0078924		RESISTOR 20.0K OHM RN55C 1% MTL FLM	DP	RN55C2002F	1.	
R 063	0078924		RESISTOR 20.0K OHM RN55C 1% MTL FLM	DP	RN55C2002F	1.	
R 064	0078924		RESISTOR 20.0K OHM RN55C 1% MTL FLM	DP	RN55C2002F	1.	
R 065	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1.	
R 066	0089090		RESISTOR 5.6K OHM 1/4W 5% CARBON FILM			1.	
R 067	0087779		POT 5K OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH502M	1.	
R 068	0089098		RESISTOR 12K OHM 1/4W 5% CARBON FILM			1.	
R 069	0079322		RESISTOR 392 OHM RN55C 1% MTL FLM			1.	
R 070	0080197		RESISTOR 14.7K OHM RN55C 1% MTL FLM	DP	RN55C1472F	1.	
R 071	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 072	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 073	0089120		RESISTOR 100K OHM 1/4W 5% CARBON FILM			1.	
R 074	0089094		RESISTOR 8.2K OHM 1/4W 5% CARBON FILM			1.	
R 075	0082649		POT 10K OHM 1/2W CER .30 DIA VERT ADJ 4T	BLI	3339P-1-103	1.	
R 076	0089102		RESISTOR 18K OHM 1/4W 5% CARBON FILM			1.	
R 077	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 078	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1.	
R 079	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 080	0089064		RESISTOR 470 OHM 1/4W 5% CARBON FILM			1.	
R 081	0089098		RESISTOR 12K OHM 1/4W 5% CARBON FILM			1.	
R 082	0089086		RESISTOR 4.7K OHM 1/4W 5% CARBON FILM	ROM	R-25 BY DESCRIPTON	1.	

Table 7-9. Assembly, PWB 6330 IF Modulator - continued

TECHNICAL MANUAL PARTS LIST

PART# 0275240ENG EN/RV DESCRIPTION: ASSY PWB 6330 IF MODULATOR

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
R 083	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1.	
R 084	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1.	
R 085	0089100		RESISTOR 15K OHM 1/4W 5% CARBON FILM			1.	
R 086	0089088		RESISTOR 4.7K OHM 1/4W 5% CARBON FILM	ROM	R-25 BY DESCRIPTON	1.	
R 087	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 088	0089056		RESISTOR 220 OHM 1/4W 5% CARBON FILM			1.	
R 089	0089036		RESISTOR 33 OHM 1/4W 5% CARBON FILM			1.	
R 090	0171740		POT 100 OHM 1/4W COMP 1/2 DIA HORIZ ADJ	AB	YH101M	1.	
R 091	0089036		RESISTOR 33 OHM 1/4W 5% CARBON FILM			1.	
R 092	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 093	0075625		RESISTOR 270 OHM 1W 10% COMP	AB	RCR32G271KS	1.	01121
R 094	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1.	
R 095	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1.	
R 096	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 097	0071908		RESISTOR 220 OHM 1/2W 10% COMP	AB	RCR20G221KS	1.	01121
R 098	0089096		RESISTOR 10K OHM 1/4W 5% CARBON FILM			1.	
R 099	0072195		RESISTOR 1.2 MEG 1/4W 10% COMP	AB	RCR07G125KS	1.	01121
R 100	0089126		RESISTOR 180K OHM 1/4W 5% CARBON FILM			1.	
R 101	0089116		RESISTOR 68K OHM 1/4W 5% CARBON FILM			1.	
R 102	0089091		RESISTOR 6.2K OHM 1/4W 5% CARBON FILM			1.	
R 103	0089100		RESISTOR 15K OHM 1/4W 5% CARBON FILM			1.	
R 104	0089088		RESISTOR 4.7K OHM 1/4W 5% CARBON FILM	ROM	R-25 BY DESCRIPTON	1.	
R 105	0089018		RESISTOR 5.6 OHM 1/4W 5% NICKEL FILM			1.	
R 106	0089076		RESISTOR 1.5K OHM 1/4W 5% CARBON FILM			1.	
R 107	0089018		RESISTOR 5.6 OHM 1/4W 5% NICKEL FILM			1.	
R 108	0089018		RESISTOR 5.6 OHM 1/4W 5% NICKEL FILM			1.	
R 110	0089018		RESISTOR 5.6 OHM 1/4W 5% NICKEL FILM			1.	
T 001	0153198		TRANSFORMER,2T 6T			1.	
T 002	0125727		TRANSFORMER 2T, 6T TO 2T, 6T			1.	
U 001	0171747		IC, MC1496P ,TV MODULATOR			1.	
U 002	0086218		IC OP AMP 14L-DIP 125C COMP QUAD 741	TI	RC4136N	1.	
U 003	0084507		IC TTL COUNTER BIN 50-MHZ DIVIDE 2X8			1.	
U 004	0171730		IC-PLL FREQ. SYN. CMOS MC145106P			1.	
W 001	0170686		JUMPER INSULATED BODY .205 IN. LONG T&R	TEV	WL 40	1.	
W 002	0170686		JUMPER INSULATED BODY .205 IN. LONG T&R	TEV	WL 40	1.	
W 003	0170686		JUMPER INSULATED BODY .205 IN. LONG T&R	TEV	WL 40	1.	
W 004	0073318		WIRE 22 BUS	BM	8021	.125	70903
W 005	0170686		JUMPER INSULATED BODY .205 IN. LONG T&R	TEV	WL 40	1.	
W 009	0230923	E	CABLE, INTERCONNECTING			1.	
W 011	0230931	E	CABLE, INTERCONNECTING			1.	
Y 001	0062521		CRYSTAL 45.75 MHZ .0025% SERIES RES	SEN	HC-18/U HOLDER	1.	
Y 002	0171761		CRYSTAL 8.000 MHZ .0025% PARALLEL RES			1.	

Table 7-9. Assembly, PWB 6330 IF Modulator - continued

Table 7-10. Assembly, Output Converter Channels 2-13 and A-W

277440-4/4 2

LINE NO.	S/A PART	ITEM NO	DESCRIPTION	QUANTITY
1	TABLE 1	5	LABEL, CHANNEL - SEE TABLE 1	1
2	277560	A1	COMMON PARTS, CHANNELS 2-13 & A-W	1
3	TABLE 1	A2	FREQUENCY SELECT COMONENTS - SEE TABLE 1	1
4	TABLE 1	Y1	CRYSTAL - .0025% SERIES RES. - SEE TABLE 1	1

TABLE 1

CHANNEL	O.C. PART NO.	ITEM 5 PART NO.	A2 PART NO.	Y1 PART NO.
2	277440	277480	277561	082321
3	277441	277481	277561	082322
4	277442	277482	277561	082324
5	277443	277483	277562	082329
6	277444	277484	277562	082332
7	277445	277485	277564	082323
8	277446	277486	277564	082325
9	277447	277487	277564	082326
10	277448	277488	277564	082327
11	277449	277489	277565	082328
12	277450	277490	277565	082330
13	277451	277491	277565	082331
A	277452	277492	277563	082551
B	277453	277493	277563	082552
C	277454	277494	277563	082553
D	277455	277495	277563	082554
E	277456	277496	277563	082555
F	277457	277497	277563	082556
G	277458	277498	277564	082557
H	277459	277499	277564	082558
I	277460	277500	277564	082559
J	277461	277501	277565	082560
K	277462	277502	277565	082561
L	277463	277503	277565	082562
M	277464	277504	277566	082563
N	277465	277505	277566	082564
O	277466	277506	277566	082565
P	277467	277507	277566	081961
Q	277468	277508	277566	081962
R	277469	277509	277566	081963
S	277470	277510	277567	087750
T	277471	277511	277567	087751
U	277472	277512	277567	087752
V	277473	277513	277567	087753
W	277474	277514	277567	087754

Scientific-Atlanta 3845 Pleasantdale Road Atlanta, Georgia 30340	SIZE A	FSCM NO. 10110	DWG NO. PL 277440-474	REV
DWN	CHK	SCALE		SHEET 2 of 2

SA375-179

TECHNICAL MANUAL PARTS LIST

PART# 0277560ENG EN/RV DESCRIPTION: COMMON PARTS, CHANNEL 2-13;A-W

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
	0277476	A	SCHMATIC DIAGRAM 6330 OUTPUT CONVERTER			.	
	0277477		TEST PROCEEDURE 6330 OUTPUT CONVERTER			.	
	0277478		TEST SPECIFICATIONS 6330 OUTPUT CONVERTE			.	
001	0277475		PWB 6330 OUTPUT CONVERTER			1.	
002	0081976		SHIELD CAN BRASS .19 DIA HOLE CAD PLATED	STX	307A-40 & DESCRIPTION	10.	
003	0073045		CABLE TIE - MINIATURE - 4 IN. LONG	PAN	SST1M	2.	06383
004	0081631		SOCKET PIN .016-.019 OPEN BOTTOM	CTC	450-3772-01-06-00	7.	71279
006	0076302		STRAP TIE DOWN RUBBER ROUND 5/64 DIA	RBT	2829-75-4	1.	98159
AT001	0231895		ATTENUATOR BT4R750P	XZ	PER SPEC DWG, 231895	1.	
C 001	0171766		CAPACITR 4700 MF 50V RADIAL 3 LEADS	TEA	HS 4700 MF/50V	1.	
C 002	0274559		CAPACITR .47 MF 50V CER MONO X7R 10%			1.	
C 003	0274559		CAPACITR .47 MF 50V CER MONO X7R 10%			1.	
C 004	0089868		CAPACITOR 100MF 25V			1.	
C 005	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 006	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 010	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 014	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 015	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 019	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 023	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 024	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 028	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 037	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 040	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 043	0274494		CAPACITR 100 PF 50V CER DISC Y5P 10%			1.	
C 048	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 051	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
CR001	0083073		DIODE 1N4007 SIL 1000V 1A	MOS	1N4007	1.	
CR002	0083073		DIODE 1N4007 SIL 1000V 1A	MOS	1N4007	1.	
CR003	0078274		DIODE 1N4002 SIL 100V 1A	MOS	1N4002	1.	04713
E 010	0081766		CORE BEAD FERRITE 14 .138X.037X.150L RED	STK	57-1829	1.	78488
E 011	0081766		CORE BEAD FERRITE 14 .138X.037X.150L RED	STK	57-1829	1.	78488
HY001	0149627		HYBRID CIRCUIT 40-300 MHZ 33.5 DB GAIN	TRW	CA2617	1.	
J 001	0085125		CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2	1.	
J 002	0085125		CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2	1.	
J 003	0171729		CONN HEADER SGL ROW STRAIGHT 3-PIN PC	PAN	HPSS156-3	1.	
J 004	0171729		CONN HEADER SGL ROW STRAIGHT 3-PIN PC	PAN	HPSS156-3	1.	
J 005	0085125		CONN HEADER DBL ROW STRAIGHT 4-PIN PC	AMP	87227-2	1.	
J 006	0233819		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 007	0233819		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 008	0233819		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
L 008	0083479		CHOKE, WIDEBAND			1.	
L 009	0083479		CHOKE, WIDEBAND			1.	
L 011	0079169		INDUCTOR 1.0 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637

Table 7-11. Common Parts, Channels 2-13 and A-W

TECHNICAL MANUAL PARTS LIST

PART# 0277560ENG FN/RV DESCRIPTION: COMMON PARTS, CHANNEL 2-13;A-W

REF DESIG	PART NO.	FN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
L 013	0078600		NOT ASSIGNED			1.	
P 001	0086884		JUMPER FEMALE .10 INCH CENTERS	BGE	65474-004	1.	
P 002	0086884		JUMPER FEMALE .10 INCH CENTERS	BGE	65474-004	1.	
P 003	0086884		JUMPER FEMALE .10 INCH CENTERS	BGE	65474-004	1.	
Q 001	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179	1.	04713
Q 002	0035669		TRANSSTR 2N5179 SIL NPN	MOS	2N5179	1.	04713
R 001	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 002	0089034		RESISTOR 27 OHM 1/4W 5% CARBON FILM			1.	
R 003	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 004	0089054		RESISTOR 180 OHM 1/4W 5% CARBON FILM			1.	
R 004	0089056		RESISTOR 220 OHM 1/4W 5% CARBON FILM			1.	
R 005	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 006	0089054		RESISTOR 180 OHM 1/4W 5% CARBON FILM			1.	
R 007	0089063		RESISTOR 430 OHM 1/4W 5% CARBON FILM			1.	
R 008	0089034		RESISTOR 27 OHM 1/4W 5% CARBON FILM			1.	
R 009	0089063		RESISTOR 430 OHM 1/4W 5% CARBON FILM			1.	
R 010	0071927		RESISTOR 470 OHM 1/2W 10% COMP	AB	RCR20G471KS	1.	01121
R 011	0089056		RESISTOR 220 OHM 1/4W 5% CARBON FILM			1.	
R 012	0089042		RESISTOR 56 OHM 1/4W 5% CARBON FILM			1.	
R 013	0089056		RESISTOR 220 OHM 1/4W 5% CARBON FILM			1.	
R 014	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 015	0089045		RESISTOR 75 OHM 1/4W 5% CARBON FILM			1.	
R 016	0089068		RESISTOR 680 OHM 1/4W 5% CARBON FILM			1.	
R 017	0089030		RESISTOR 18 OHM 1/4W 5% CARBON FILM			1.	
R 018	0089068		RESISTOR 680 OHM 1/4W 5% CARBON FILM			1.	
R 019	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 020	0089016		RESISTOR 4.7 OHM 1/4W 5% NICKEL FILM			1.	
R 021	0089067		RESISTOR 620 OHM 1/4W 5% CARBON FILM			1.	
R 022	0089082		RESISTOR 2.7K OHM 1/4W 5% CARBON FILM			1.	
R 023	0089079		RESISTOR 2.0K OHM 1/4W 5% CARBON FILM			1.	
R 024	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 025	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
R 026	0089040		RESISTOR 47 OHM 1/4W 5% CARBON FILM			1.	
R 027	0089078		RESISTOR 1.8K OHM 1/4W 5% CARBON FILM			1.	
R 028	0089083		RESISTOR 3.0K OHM 1/4W 5% CARBON FILM			1.	
R 029	0089072		RESISTOR 1.0K OHM 1/4W 5% CARBON FILM			1.	
R 030	0089060		RESISTOR 330 OHM 1/4W 5% CARBON FILM			1.	
TP001	0233600	A	CONNECTOR, TYPE "F" PC MOUNT			1.	
TP002	0233600	A	CONNECTOR, TYPE "F" PC MOUNT			1.	
TP003	0233600	A	CONNECTOR, TYPE "F" PC MOUNT			1.	
U 001	0170712		MIXER DOUBLE BALANCED 1-500 MHZ PC MT	MCT	SRL-1	1.	
U 002	0089245		HYBRID AMPL 0-400MHZ 14DB GAIN 25MA TO39			1.	

Table 7-11. Common Parts, Channels 2-13 and A-W - continued

Table 7-11. Common Parts, Channels 2-13 and A-W - continued

TECHNICAL MANUAL PARTS LIST

PART# 0277560ENG EN/RV DESCRIPTION: COMMON PARTS, CHANNEL 2-13;A-W

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
W 005	0275250		ASSEMBLY, CABLE-REGULATOR			1.	
W 006	0275246		ASSY, COAX-CABLE			1.	
W 007	0275252		ASSEMBLY, CABLE-COAX			1.	
W 008	0275251		ASSEMBLY, CABLE-COAX			1.	

TECHNICAL MANUAL PARTS LIST

PART# 0277561ENG FN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH 2-4 6330 O.C

REF DESIG	PART NO.	FN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 007	0274409	D	CAPACITR 51 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274409	1.	
C 008	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 009	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 011	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 012	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 013	0274410	D	CAPACITR 56 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274410	1.	
C 016	0274410	D	CAPACITR 56 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274410	1.	
C 017	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 018	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 020	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 021	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 022	0274410	D	CAPACITR 56 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274410	1.	
C 025	0274410	D	CAPACITR 56 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274410	1.	
C 026	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 027	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 029	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 030	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 031	0274410	D	CAPACITR 56 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274410	1.	
C 032	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 033	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 034	0274408	D	CAPACITR 47 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274408	1.	
C 035	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 036	0274374	D	CAPACITR 4.7 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274374	1.	
C 038	0274374	D	CAPACITR 4.7 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274374	1.	
C 039	0274376	D	CAPACITR 5.6 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274376	1.	
C 041	0078600		NOT ASSIGNED			.	
C 042	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 044	0078600		NOT ASSIGNED			.	
C 045	0078600		NOT ASSIGNED			.	
C 046	0078600		NOT ASSIGNED			.	
C 047	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 049	0274390	D	CAPACITR 14 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274390	1.	
C 050	0274408	D	CAPACITR 47 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274408	1.	
L 001	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 002	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 003	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 004	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 005	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 006	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 007	0145353		INDUCTOR 13.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 010	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 012	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 014	0170685		JUMPER INSULATED BODY .100 IN. LONG T&R	TEV	WL 20	1.	
L 015	0079167		INDUCTOR .33 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	

Table 7-12. Frequency Select Components, Channels 2-4, Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0277562ENG EN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH 5-6 6330 O.C.

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
002	0081976		SHIELD CAN BRASS .19 DIA HOLE CAD PLATED	STX	307A-40 & DESCRIPTION	1.	
C 007	0274407	D	CAPACITR 39 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274407	1.	
C 008	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 009	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 011	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 012	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 013	0274407	D	CAPACITR 39 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274407	1.	
C 016	0274407	D	CAPACITR 39 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274407	1.	
C 017	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 018	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 020	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 021	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 022	0274407	D	CAPACITR 39 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274407	1.	
C 025	0274407	D	CAPACITR 39 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274407	1.	
C 026	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 027	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 029	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 030	0274388	D	CAPACITR 12 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274388	1.	
C 031	0274407	D	CAPACITR 39 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274407	1.	
C 032	0078600		NOT ASSIGNED			.	
C 033	0078600		NOT ASSIGNED			.	
C 034	0274408	D	CAPACITR 47 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274408	1.	
C 034	0277408	B	ASSY 6330 MODULATOR CHAN 10			1.	
C 035	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 036	0274374	D	CAPACITR 4.7 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274374	1.	
C 038	0274374	D	CAPACITR 4.7 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274374	1.	
C 039	0274376	D	CAPACITR 5.6 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274376	1.	
C 041	0078600		NOT ASSIGNED			.	
C 042	0274539		CAPACITR .010 MF 50V CER MONO X7R 10%			1.	
C 044	0078600		NOT ASSIGNED			.	
C 045	0078600		NOT ASSIGNED			.	
C 046	0078600		NOT ASSIGNED			.	
C 047	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 049	0274390	D	CAPACITR 14 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274390	1.	
L 001	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 002	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 003	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 004	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 005	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 006	0145348		INDUCTOR 8.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 007	0078600		NOT ASSIGNED			.	
L 010	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 012	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 014	0170685		JUMPER INSULATED BODY .100 IN. LONG T&R	TEV	WL 20	1.	
L 015	0077944		INDUCTOR .27 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	

Table 7-13. Frequency Select Components, Channels 5-6, Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0277563ENG EN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH A-F 6330 O.C.

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 007	0274399	D	CAPACITR 23 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274399	1.	
C 008	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 009	0274372	D	CAPACITR 3.9 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274372	1.	
C 011	0274372	D	CAPACITR 3.9 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274372	1.	
C 012	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 013	0274399	D	CAPACITR 23 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274399	1.	
C 016	0274399	D	CAPACITR 23 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274399	1.	
C 017	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 018	0274372	D	CAPACITR 3.9 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274372	1.	
C 020	0274372	D	CAPACITR 3.9 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274372	1.	
C 021	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 022	0274399	D	CAPACITR 23 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274399	1.	
C 025	0274399	D	CAPACITR 23 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274399	1.	
C 026	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 027	0274372	D	CAPACITR 3.9 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274372	1.	
C 029	0274372	D	CAPACITR 3.9 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274372	1.	
C 030	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 031	0274399	D	CAPACITR 23 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274399	1.	
C 032	0078600		NOT ASSIGNED			.	
C 033	0078600		NOT ASSIGNED			.	
C 034	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 035	0274371	D	CAPACITR 3.6 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274371	1.	
C 036	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 038	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 039	0274376	D	CAPACITR 5.6 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274376	1.	
C 041	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 042	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 044	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 045	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 046	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 047	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 049	0274393	D	CAPACITR 17 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274393	1.	
C 050	0274408	D	CAPACITR 47 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274408	1.	
L 001	0145347		INDUCTOR 7.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 002	0145347		INDUCTOR 7.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 003	0145347		INDUCTOR 7.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 004	0145347		INDUCTOR 7.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 005	0145347		INDUCTOR 7.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 006	0145347		INDUCTOR 7.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 007	0078600		NOT ASSIGNED			.	
L 010	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 012	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 014	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 015	0077954		INDUCTOR .47 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	

Table 7-14. Frequency Select Components, Channels A-F, Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0277564ENG EN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH G-I;7-10 6330

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 007	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 008	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 009	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 011	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 012	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 013	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 016	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 017	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 018	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 020	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 021	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 022	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 025	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 026	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 027	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 029	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 030	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 031	0274397	D	CAPACITR 21 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274397	1.	
C 032	0078600		NOT ASSIGNED			.	
C 033	0078600		NOT ASSIGNED			.	
C 034	0274401	D	CAPACITR 25 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274401	1.	
C 035	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 036	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 038	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 039	0274375	D	CAPACITR 5.1 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274375	1.	
C 041	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 042	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 044	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 045	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 046	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 047	0274386	D	CAPACITR 10 PF 50V CER DISC COG +-.25PF	XZ	PER SA DWG 274386	1.	
C 049	0274390	D	CAPACITR 14 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274390	1.	
C 050	0274425		CAPACITR 43 PF 50V CER MONO COG 5%			1.	
L 001	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 002	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 003	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 004	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 005	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 006	0145345		INDUCTOR 5.5 T #24 6-32X3/8 INCH CARB J			1.	
L 007	0078600		NOT ASSIGNED			.	
L 010	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 012	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 014	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 015	0079167		INDUCTOR .33 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	

Table 7-15. Frequency Select Components, Channels G-I and 7-10, Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0277565ENG EN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH 11-13,J-L 6330

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 007	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 008	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 009	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 011	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 012	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 013	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 016	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 017	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 018	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 020	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 021	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 022	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 025	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 026	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 027	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 029	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 030	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 031	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 032	0078600		NOT ASSIGNED			.	
C 033	0078600		NOT ASSIGNED			.	
C 034	0274401	D	CAPACITR 25 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274401	1.	
C 035	0274374	D	CAPACITR 4.7 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274374	1.	
C 036	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 038	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 039	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 041	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 042	0274400	D	CAPACITR 24 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274400	1.	
C 044	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 045	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 046	0274400	D	CAPACITR 24 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274400	1.	
C 047	0274377	D	CAPACITR 6.2 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274377	1.	
C 049	0274390	D	CAPACITR 14 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274390	1.	
C 050	0274425		CAPACITR 43 PF 50V CER MONO COG 5%			1.	
L 001	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 002	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 003	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 004	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 005	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 006	0145344		INDUCTOR 4.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 007	0078600		NOT ASSIGNED			.	
L 010	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 012	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 014	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 015	0077944		INDUCTOR .27 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	

Table 7-16. Frequency Select Components, Channels 11-13 and J-L, Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0277566ENG EN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH M-R 6330 O.C

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 007	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 008	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 009	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 011	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 012	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 013	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 016	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 017	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 018	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 020	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 021	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 022	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 025	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 026	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 027	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 029	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 030	0274367	D	CAPACITR 2.4 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274367	1.	
C 031	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 032	0078600		NOT ASSIGNED			.	
C 033	0078600		NOT ASSIGNED			.	
C 034	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 035	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 036	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 038	0274368	D	CAPACITR 2.7 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274368	1.	
C 039	0274375	D	CAPACITR 5.1 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274375	1.	
C 041	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 042	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 044	0274395	D	CAPACITR 19 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274395	1.	
C 045	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 046	0274405	D	CAPACITR 33 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274405	1.	
C 047	0274384		CAPACITR 9.1 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274384	1.	
C 049	0274393	D	CAPACITR 17 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274393	1.	
C 050	0274409	D	CAPACITR 51 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274409	1.	
L 001	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 002	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 003	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 004	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 005	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 006	0145343		INDUCTOR 3.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 007	0078600		NOT ASSIGNED			.	
L 010	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 012	0145341		INDUCTOR 1.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 014	0145341		INDUCTOR 1.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 015	0079113		INDUCTOR .18 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	

Table 7-17. Frequency Select Components, Channels M-R Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0277567ENG EN/RV DESCRIPTION: FREQ SELECT COMPONENTS,CH S-W 6330 O.C

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
C 007	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 008	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 009	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 011	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 012	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 013	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 016	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 017	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 018	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 020	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 021	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 022	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 025	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 026	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 027	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 029	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 030	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 031	0274394	D	CAPACITR 18 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274394	1.	
C 032	0078600		NOT ASSIGNED			.	
C 033	0078600		NOT ASSIGNED			.	
C 034	0274396	D	CAPACITR 20 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274396	1.	
C 035	0274377	D	CAPACITR 6.2 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274377	1.	
C 036	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 038	0274370	D	CAPACITR 3.3 PF 50V CER DISC COJ +-.10PF	XZ	PER SA DWG 274370	1.	
C 039	0274371	D	CAPACITR 3.6 PF 50V CER DISC COJ +-.25PF	XZ	PER SA DWG 274371	1.	
C 041	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 042	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 044	0274392	D	CAPACITR 16 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274392	1.	
C 045	0087125		CAPACITR 3.3-18 PF MIN CER PC MT	SP	GKU 18000	1.	
C 046	0274403	D	CAPACITR 27 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274403	1.	
C 047	0274381	D	CAPACITR 7.5 PF 50V CER DISC COH +-.25PF	XZ	PER SA DWG 274381	1.	
C 049	0274388	D	CAPACITR 12 PF 50V CER CISC COG 5%	XZ	PER SA DWG 274388	1.	
C 050	0274406	D	CAPACITR 36 PF 50V CER DISC COG 5%	XZ	PER SA DWG 274406	1.	
L 001	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 002	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 003	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 004	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 005	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 006	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 007	0078600		NOT ASSIGNED			.	
L 010	0145341		INDUCTOR 1.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 012	0145341		INDUCTOR 1.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 014	0145341		INDUCTOR 1.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	
L 015	0079113		INDUCTOR .18 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
L 016	0145342		INDUCTOR 2.5 T #24 6-32X3/8 INCH CARB J	CCT	PER CONT. DWG.	1.	

Table 7-18. Frequency Select Components, Channels S-W, Output Converter

TECHNICAL MANUAL PARTS LIST

PART# 0275247 EN/RV DESCRIPTION: SPECTRUM INVERTION ACCESSORY KIT

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
L 010	0077944		INDUCTOR .27 UH SUBMIN UNSHLD 10%	DP	IR-2	1.	91637
Y 001	0171757		CRYSTAL, 42.25MHZ .0025% SERIES RES			1.	

Table 7-19. Spectrum Inversion Accessory Kit

TECHNICAL MANUAL PARTS LIST

PART# 0275248 EN/RV DESCRIPTION: DIFLA ACCESSORY KIT

REF DESIG	PART NO.	EN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0036148		WASHER 3/8 FOR RF CONNECTORS	SA	PER DWG 36148	4.	10110
002	0076877		NUT 3/8-32 HEX,POT MTG,BRASS,NI PLT	SH	1195-M	4.	71002
003	0073045		CABLE TIE - MINIATURE - 4 IN, LONG	PAN	SST1M	1.	06383
004	0080560		BAG, PLASTIC 8 X 10 MINI GRIP, ZIP LIP	KCL	BY DESCRIPTION	1.	
J 010	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 011	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 012	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 013	0233819		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
W 012	0230929	E	CABLE, INTERCONNECTING			1.	
W 013	0230929	E	CABLE, INTERCONNECTING			1.	
W 014	0230032	C	RF CABLE ASSY 7.25 IN			1.	
W 015	0230921	E	CABLE, INTERCONNECTING			1.	
W 016	0230923	E	CABLE, INTERCONNECTING			1.	
W 017	0230032	C	RF CABLE ASSY 7.25 IN			1.	

Table 7-20. DIFLA Accessory Kit

TECHNICAL MANUAL PARTS LIST

PART# 0275249 FN/RV DESCRIPTION: DIFLB ACCESSORY KIT

REF DESIG	PART NO.	FN RV	DESCRIPTION	VENDOR	VENDOR PART NUMBER	QTY	FSCM CODE
001	0036148		WASHER 3/8 FOR RF CONNECTORS	SA	PER DWG 36148	4.	10110
002	0076877		NUT 3/8-32 HEX,PDT MTG,BRASS,NI PLT	SH	1195-M	4.	71002
J 012	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 013	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 014	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
J 015	0233619		CONNECTOR COAX F FEMALE DOUBLE D MT			1.	
W 015	0230921	E	CABLE, INTERCONNECTING			1.	
W 016	0230923	E	CABLE, INTERCONNECTING			1.	
W 017	0230032	C	RF CABLE ASSY 7.25 IN			1.	
W 018	0230923	E	CABLE, INTERCONNECTING			1.	
W 019	0230924	E	CABLE, INTERCONNECTING			1.	
W 020	0230032	C	RF CABLE ASSY 7.25 IN			1.	

Table 7-21. DIFLB Accessory Kit

7.5 MANUFACTURERS' CODES

Vendor Code	Manufacturer
AB	Allen-Bradley Milwaukee, WI
AEP	Alco Electronics Products, Inc. No. Andover, MA
AMP	AMP, Inc. Harrisburg, PA
BG	Boston Gerr Works Quincy, MA
BLI	Bourns Laboratories, Inc. Riverside, CA
BM	Belden Manufacturing Co. Chicago, IL
BUS	Bussman Manufacturing St. Louis, MO
CCT	Coilcraft Cary, IL
CK	C & K Components, Inc. Newton, MA
CKI	CTS Knights, Inc. Sandwich, IL
CRL	Centralab Milwaukee, WI
CS	Continental Screw Company New Bedford, MA
CSM	Camcar Screw & Mfg - Tadtite Belvedere, IL
CTC	Cambridge Thermionic Corporation Cambridge, MA
DI	Dialight Corporation Brooklyn, NY

Vendor Code	Manufacturer
DOW	Dow Corning Corp. Midland, MI
DP	Dale Products, Inc. Columbus, NE
ER	Erie Resistor Corporation Erie, PA
ERT	Erie Technological Products, Inc. Tech. Materials Division State College, PA
FSC	Fairchild Semiconductor Corp. San Rafael, CA
GIL	Gilbert Engineering Co. Phoenix, AZ
HP	Hewlett-Packard Palo Alto, CA
ITT	ITT Wire and Cable Atlanta, GA
J	E. F. Johnson Company Waseca, MN
KEM	Kemet Division/Union Carbide Greenville, SC
L	Littlefuse, Inc. Des Plaines, IL
M	J. W. Miller Company Los Angeles, CA
MCT	Mini Circuits Lab Brooklyn, NY
MOS	Motorola Semiconductor Products Phoenix, AZ
MRT	Murata Corp. of America Marietta, GA

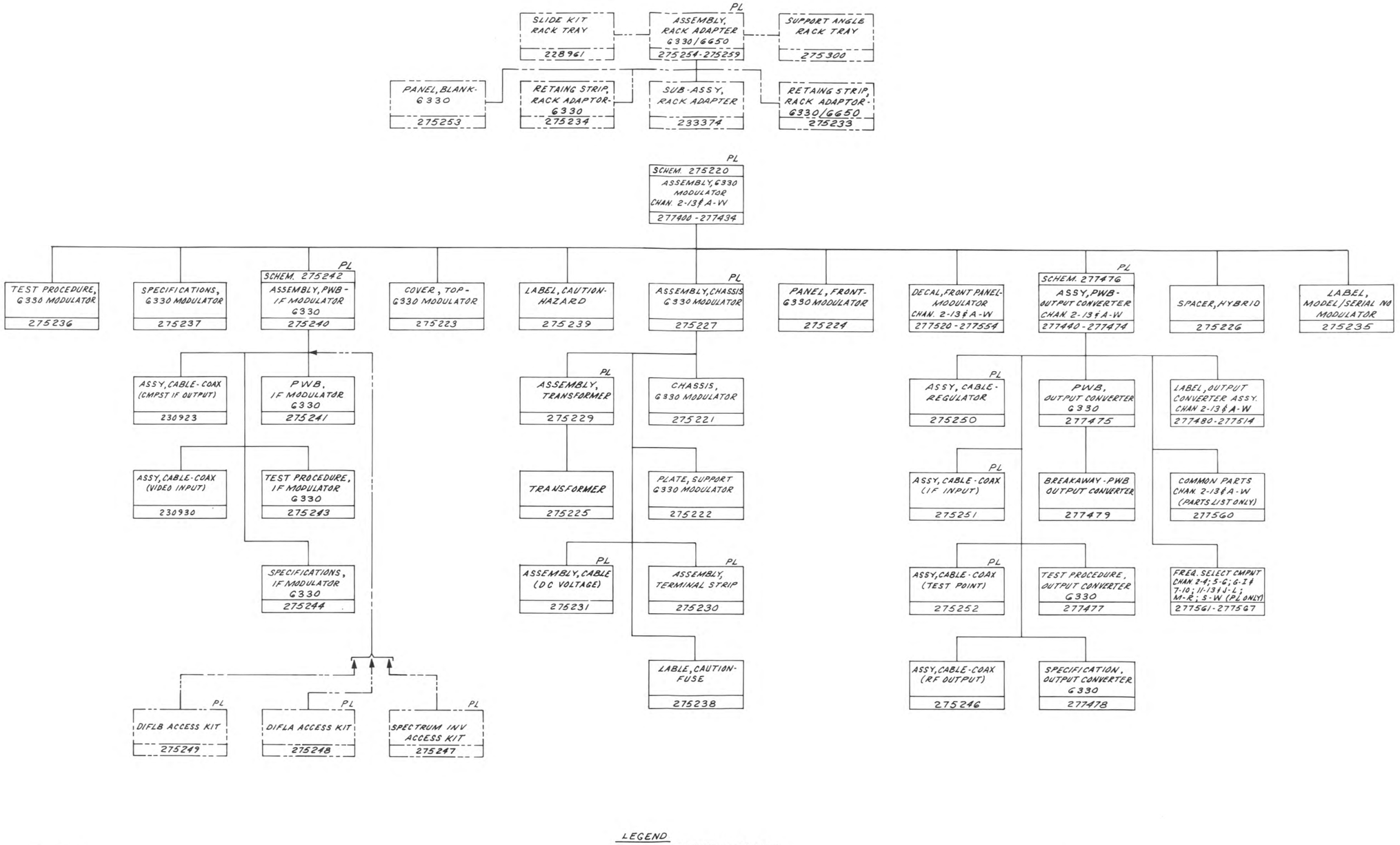
Vendor Code	Manufacturer
NSC	National Semiconductor Corp. Danbury, CT
PAN	Panduit Corporation Tinley Park, IL
RCA	Radio Corporation of America Harrison, NJ
RBT	Rubber Teck Gardena, CA
ROM	R-Ohm Corporation Irving, CA
SEN	Sentry Mfg. Oklahoma City, OK
SH	Herman H. Smith Brooklyn, NY
SP	Sprague Products Company Huntsville, AL
STK	Stackpole Carbon Company Magnet Division St. Marys, PA
STX	Staver Co. Bay Shore, NY
SWK	Sawtek, Inc. Orlando, FL
SY	Sylvania Electric Products New York, NY
TEA	Teapo Norcross, GA
TEV	Tevis Huntington Beach, CA
THC	Thermalloy Company Dallas, TX

Vendor Code	Manufacturer
TI	Texas Instruments Dallas, TX
TRW	Thompson - Ramo - Wooldridge Trenton, NY
XZ	Any manufacturer that produces this part to appropriate military, Federal, or commercial specifications.

SECTION 8
DRAWINGS

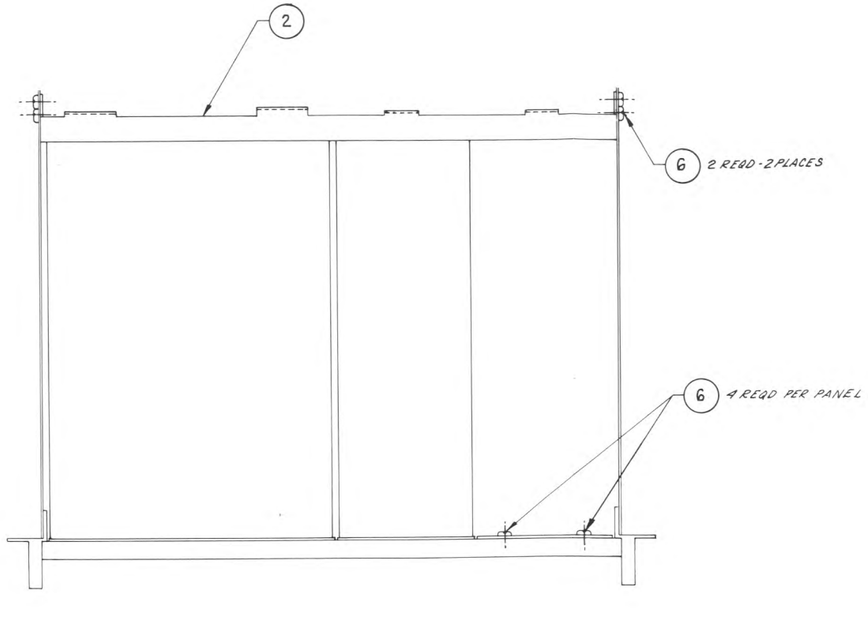
This section contains the following assembly drawings and schematic diagrams.

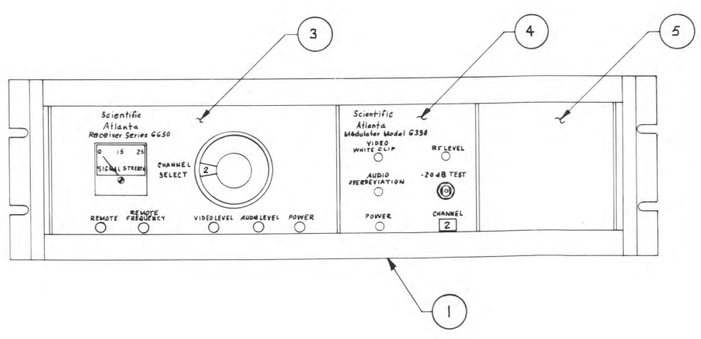
Figure	Drawing Number	Description
8-1	275228	Family Tree, 6330 Modulator
8-2	275254-275259	Assembly Drawing, Rack Adapter
8-3	277400-277434	Assembly Drawing 6330 Modulator
8-4	275227	Assembly Drawing, Chassis 6330 Modulator
8-5	275220	Schematic Diagram, 6330 Modulator
8-6	275240	Assembly Drawing, PWB IF Modulator
8-7	275242	Schematic Diagram, PWB IF Modulator
8-8	277440-277474	Assembly Drawing, PWB Output Converter
8-9	277476	Schematic Diagram, PWB Output Converter (Sheet 1 of 2)
8-9	277476	Schematic Diagram, PWB Output Converter (Sheet 2 of 2)


SLIDE KIT RACK TRAY 228961
PL
ASSEMBLY, RACK ADAPTER G330/6650 275254-275259
SUPPORT ANGLE RACK TRAY 275300
PANEL, BLANK-G330 275253
RETAING STRIP, RACK ADAPTOR-G330 275234
SUB-ASSY, RACK ADAPTER 233374
RETAING STRIP, RACK ADAPTOR-G330/6650 275233
PL
SCHEM. 275220
ASSEMBLY, G330 MODULATOR CHAN. 2-13 & A-W
277400-277434
TEST PROCEDURE, G330 MODULATOR 275236
SPECIFICATIONS, G330 MODULATOR 275237
PL
SCHEM. 275242
ASSEMBLY, PWB-I.F. MODULATOR G330 275240
COVER, TOP-G330 MODULATOR 275223
LABEL, CAUTION-HAZARD 275239
PL
ASSEMBLY, CHASSIS G330 MODULATOR 275227
PANEL, FRONT-G330 MODULATOR 275224
DECAL, FRONT PANEL-MODULATOR CHAN. 2-13 & A-W 277520-277554
PL
SCHEM. 277476
ASSY, PWB-OUTPUT CONVERTER CHAN 2-13 & A-W 277440-277474
SPACER, HYBRID 275226
LABEL, MODEL/SERIAL NO MODULATOR 275235
ASSY, CABLE-COAX (CMPST I.F. OUTPUT) 230923
PWB, I.F. MODULATOR G330 275241
PL
ASSEMBLY, TRANSFORMER 275229
CHASSIS, G330 MODULATOR 275221
PL
ASSY, CABLE-REGULATOR 275250
PWB, OUTPUT CONVERTER G330 277475
LABEL, OUTPUT CONVERTER ASSY. CHAN 2-13 & A-W 277480-277514
ASSY, CABLE-COAX (VIDEO INPUT) 230930
TEST PROCEDURE, I.F. MODULATOR G330 275243
TRANSFORMER 275225
PLATE, SUPPORT G330 MODULATOR 275222
PL
ASSY, CABLE-COAX (I.F. INPUT) 275251
BREAKAWAY-PWB OUTPUT CONVERTER 277479
COMMON PARTS CHAN. 2-13 & A-W (PARTS LIST ONLY) 277560
SPECIFICATIONS, I.F. MODULATOR G330 275244
PL
ASSEMBLY, CABLE (D.C. VOLTAGE) 275231
PL
ASSEMBLY, TERMINAL STRIP 275230
PL
ASSY, CABLE-COAX (TEST POINT) 275252
TEST PROCEDURE, OUTPUT CONVERTER G330 277477
FREQ. SELECT CMPNT CHAN. 2-4; 5-6; 6-1 & 7-10; 11-13 & I-L; M-R; S-W (PL ONLY) 277561-277567
LABLE, CAUTION-FUSE 275238
PL
DIFLB ACCESS KIT 275249
PL
DIFLA ACCESS KIT 275248
PL
SPECTRUM INV ACCESS KIT 275247
ASSY, CABLE-COAX (R.F. OUTPUT) 275246
SPECIFICATION, OUTPUT CONVERTER G330 277478
LEGEND
PL SEPARATE PARTS LIST
PARTS FOR BASIC UNIT
OPTIONAL PARTS

275228

Figure 8-1. Family Tree, 6330 Modulator



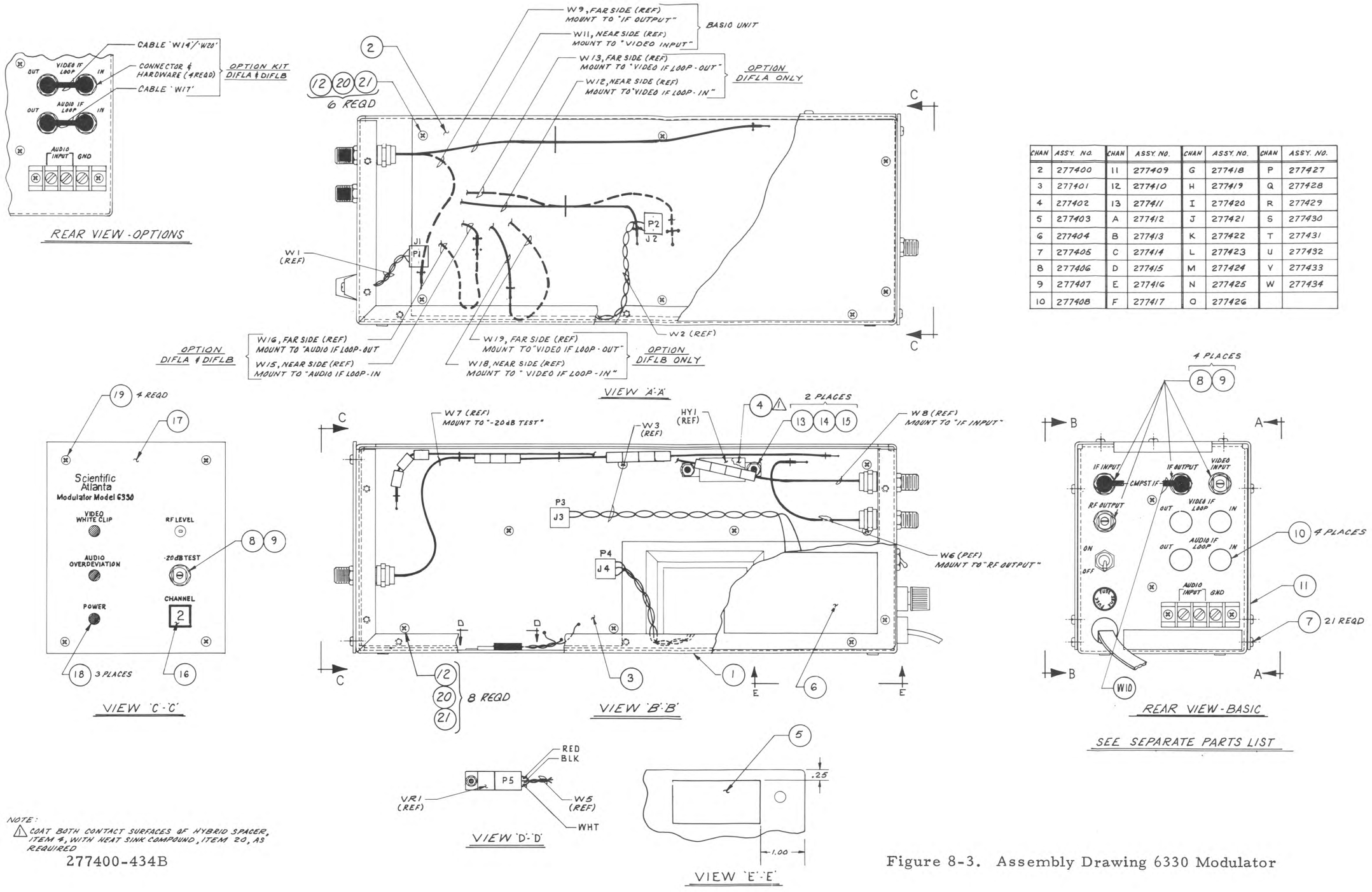


ASSY, RACK ADAPTER SA PART NO.	QUANITYS REQUIRED		
	RECEIVER SERIES 6650 (3)	MODULATOR MODEL 6330 (4)	BLANK PANEL (5)
275254	1	1	1
275255	1	2	—
275256	—	4	—
275257	—	3	1
275258	—	2	2
275259	—	1	3

SEE SEPARATE PARTS LIST

275254-259

Figure 8-2. Assembly Drawing, Rack Adapter

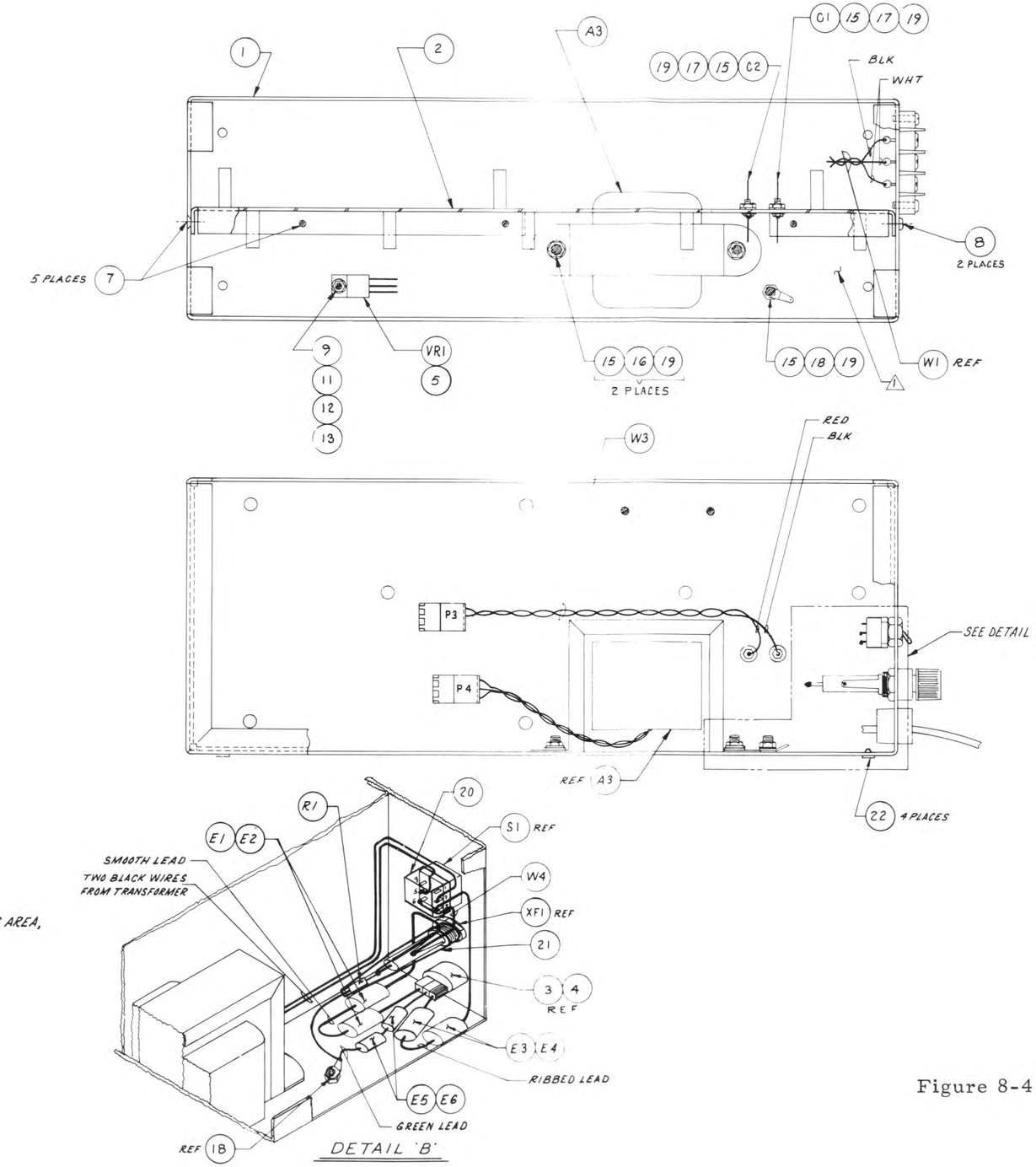


CHAN	ASSY. NO.	CHAN	ASSY. NO.	CHAN	ASSY. NO.	CHAN	ASSY. NO.
2	277400	11	277409	G	277418	P	277427
3	277401	12	277410	H	277419	Q	277428
4	277402	13	277411	I	277420	R	277429
5	277403	A	277412	J	277421	S	277430
6	277404	B	277413	K	277422	T	277431
7	277405	C	277414	L	277423	U	277432
8	277406	D	277415	M	277424	V	277433
9	277407	E	277416	N	277425	W	277434
10	277408	F	277417	O	277426		

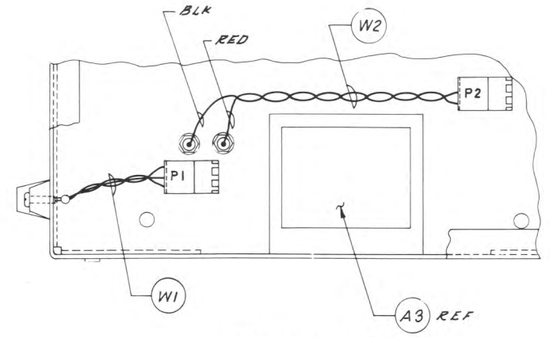
NOTE:
⚠ COAT BOTH CONTACT SURFACES OF HYBRID SPACER, ITEM 4, WITH HEAT SINK COMPOUND, ITEM 20, AS REQUIRED

277400-434B

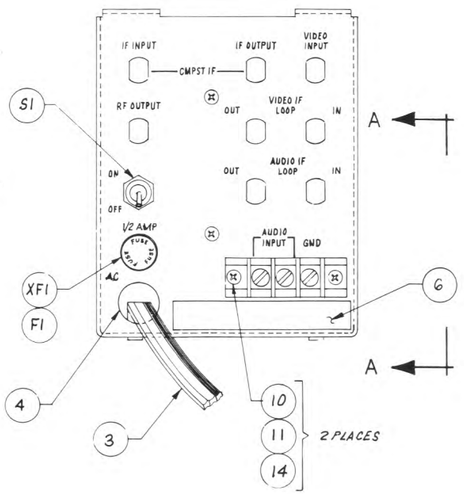
Figure 8-3. Assembly Drawing 6330 Modulator



DETAIL 'B'



SECTION A-A



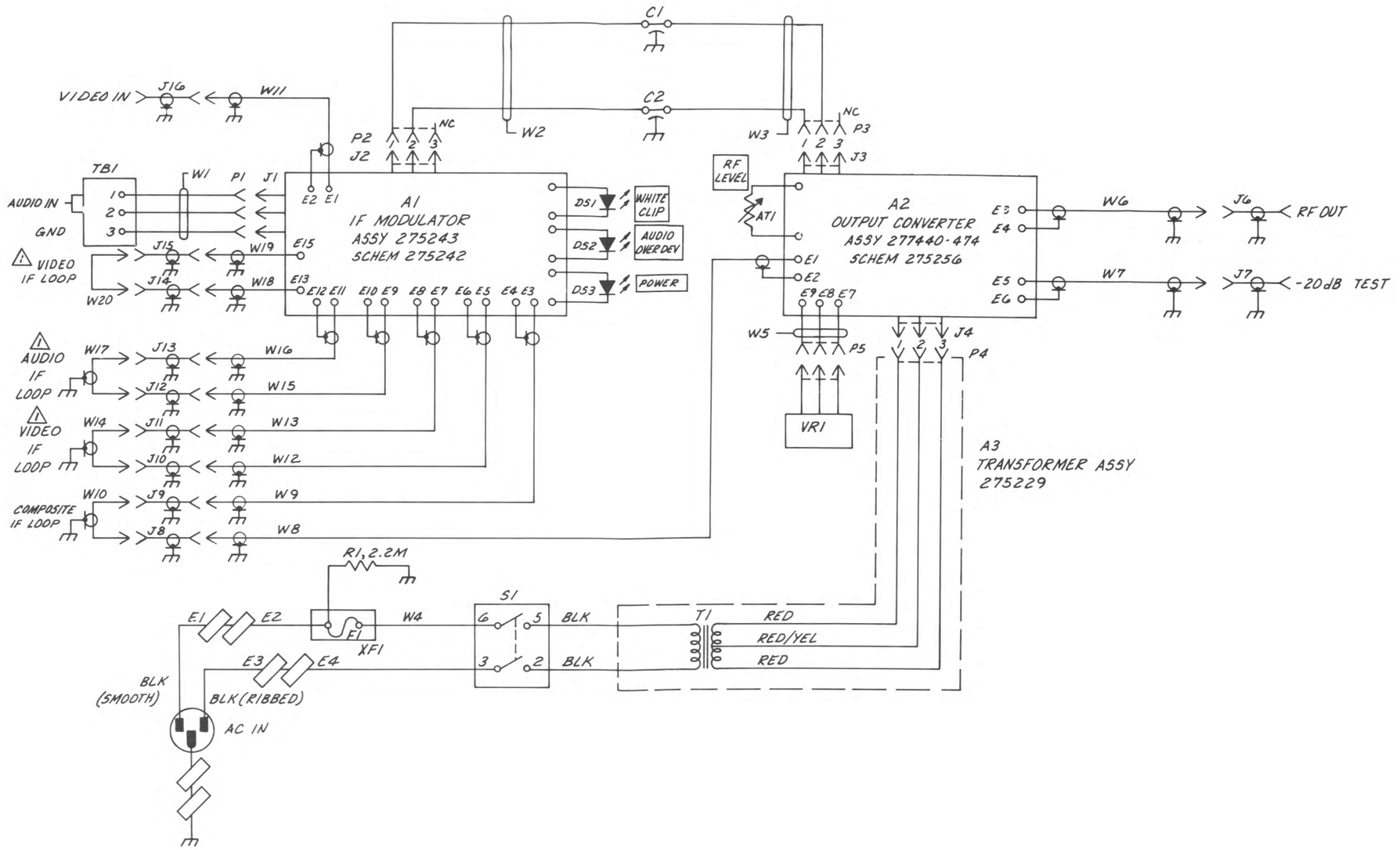
SEE SEPARATE PARTS LIST

NOTE :

⚠ WIRING NOT SHOWN IN THIS AREA, FOR CLARITY.

275227A

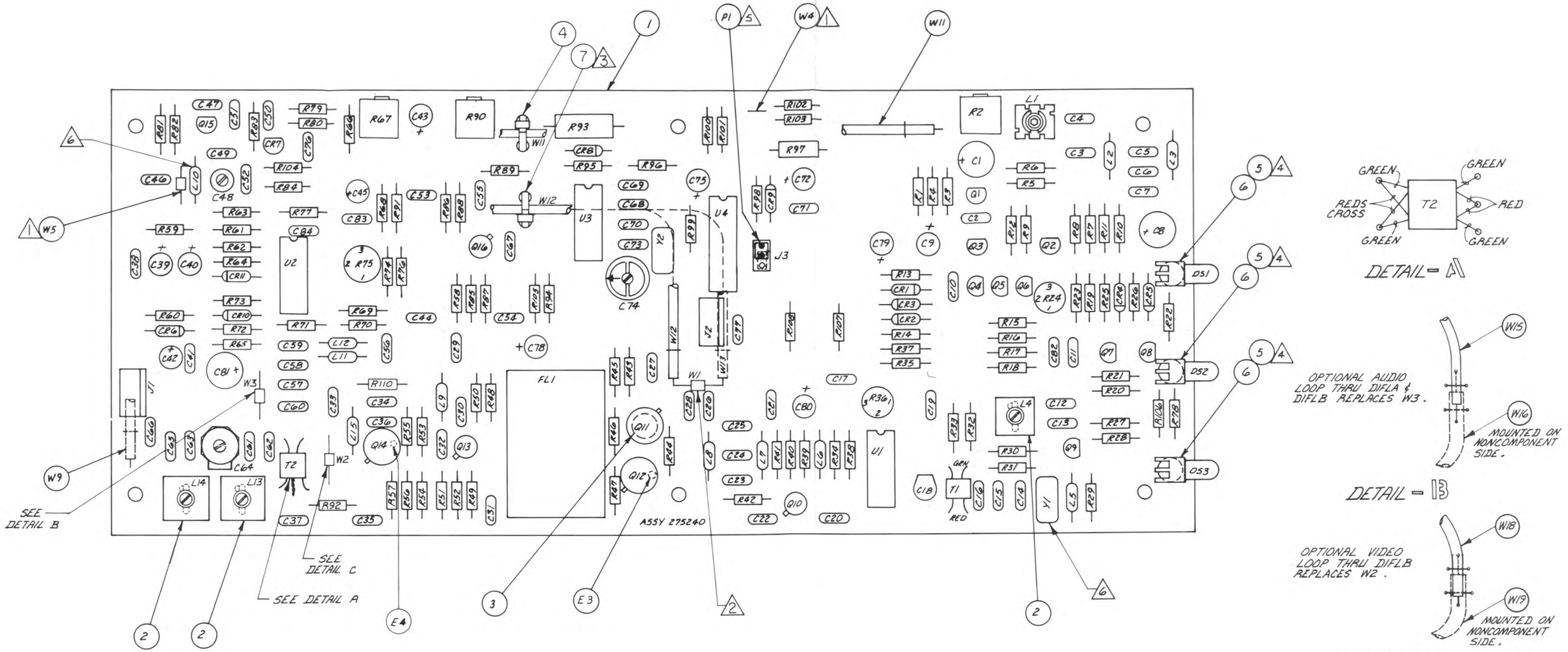
Figure 8-4. Assembly Drawing, Chassis 6330 Modulator



NOTE:
⚠ - VIDEO IF AND AUDIO IF LOOP-THRUS (DIFLA AND DIFLB) ARE OPTIONAL WITH DIFLA ACESSING THE VIDEO IF BEFORE THE SAW VESTIGIAL SIDEBAND FILTER AND DIFLB ACCESSING THE VDEO IF AFTER THE SAW FILTER.

275220

Figure 8-5. Schematic Diagram, 6330 Modulator



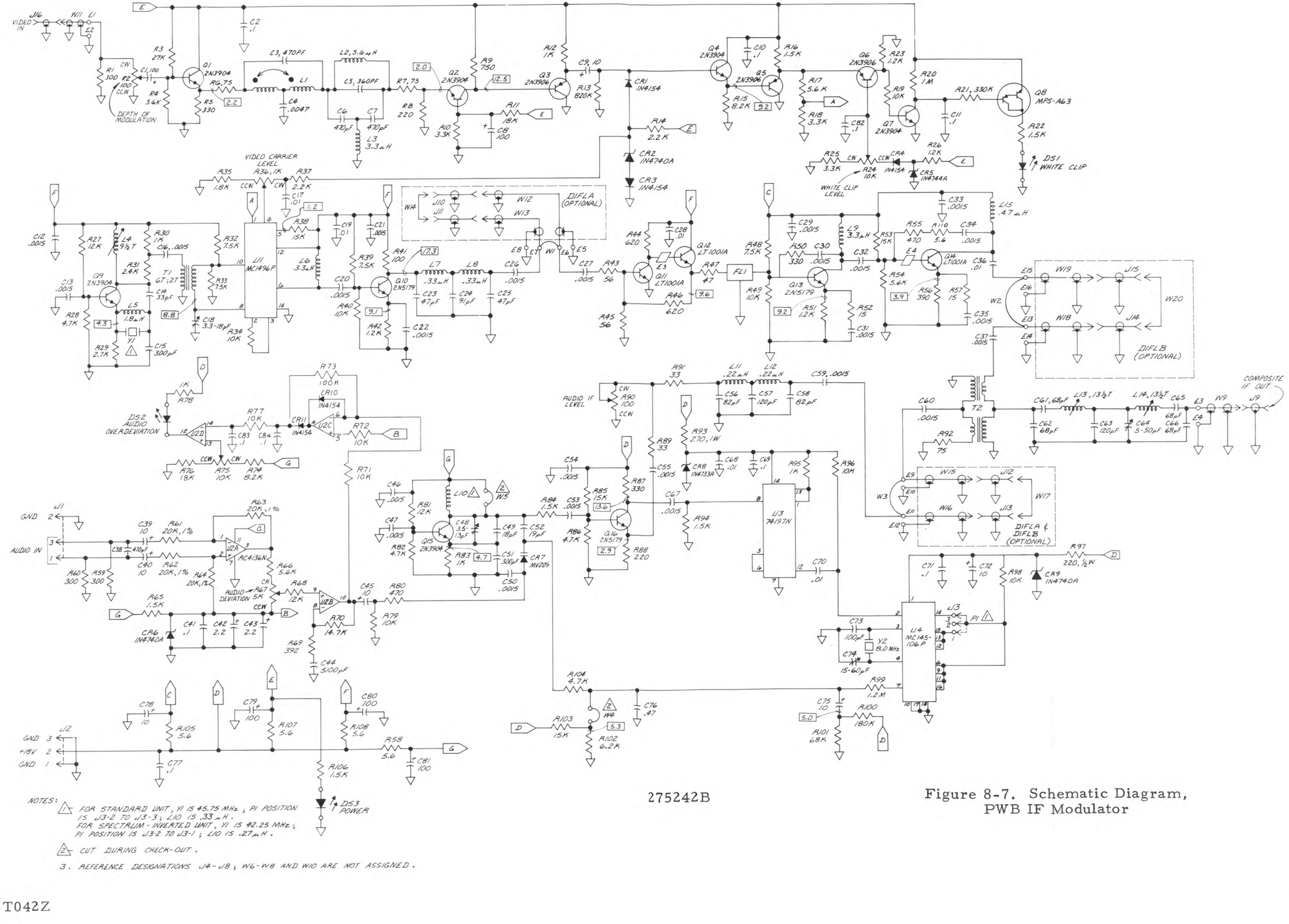
NOTES:

1. CUT DURING CHECKOUT.
2. W1 IS REPLACED BY W12 AND W13 FOR OPTIONAL VIDEO LOOP-THRU DIFLA.
3. CABLE TIE PROVIDED WITH OPTION DIFLA.
4. FLAT SIDE OF LED BASE POINTS TOWARD THE TOP OF THE PWB.
5. P1 AND J3 ARE SHOWN IN THE NORMAL OPERATING POSITION BY A SOLID P1 AND SOLID J3 PINS; FOR A SPECTRUM INVERTED UNIT P1 IS MOVED TO THE BOTTOM TWO PINS AS INDICATED BY THE DOTTED P1.
6. FOR STANDARD UNIT, Y1 IS 45.75 MHz & L10 IS .33 μH. FOR SPECTRUM-INVERTED UNIT, Y1 IS 42.25 MHz & L10 IS .27 μH.

275240A

SEE SEPARATE PARTS LIST

Figure 8-6. Assembly Drawing, PWB IF Modulator

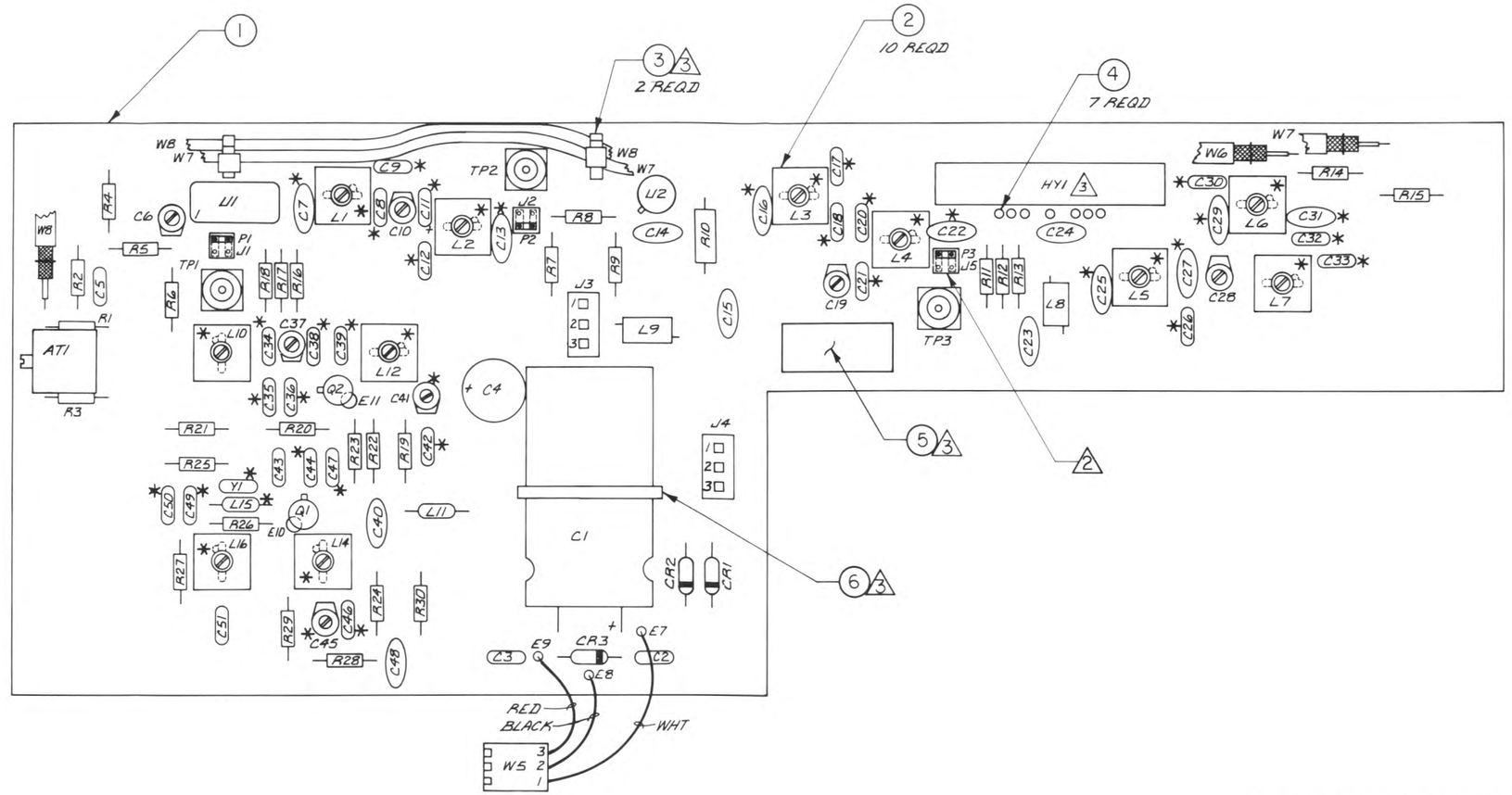


NOTES:

1. FOR STANDARD UNIT, Y1 IS 45.75 MHz; P1 POSITION IS J3-2 TO J3-3; L10 IS .33 μH. FOR SPECTRUM-INVERTED UNIT, Y1 IS 42.25 MHz; P1 POSITION IS J3-2 TO J3-1; L10 IS .27 μH.
2. CUT DURING CHECK-OUT.
3. REFERENCE DESIGNATIONS J4-J8; W6-W8 AND W10 ARE NOT ASSIGNED.

275242B

Figure 8-7. Schematic Diagram, PWB IF Modulator



NOTES:

1. ASTERISK INDICATES CHANNEL SELECT COMPONENTS.

2. ALL PLUGS/JUMPERS ARE SHOWN IN NORMAL OPERATING POSITION (SOLID PINS AND OUTLINE) THE POSITIONS SHOWN BY DASHED LINES ARE USED FOR TEST AND ALIGNMENT.

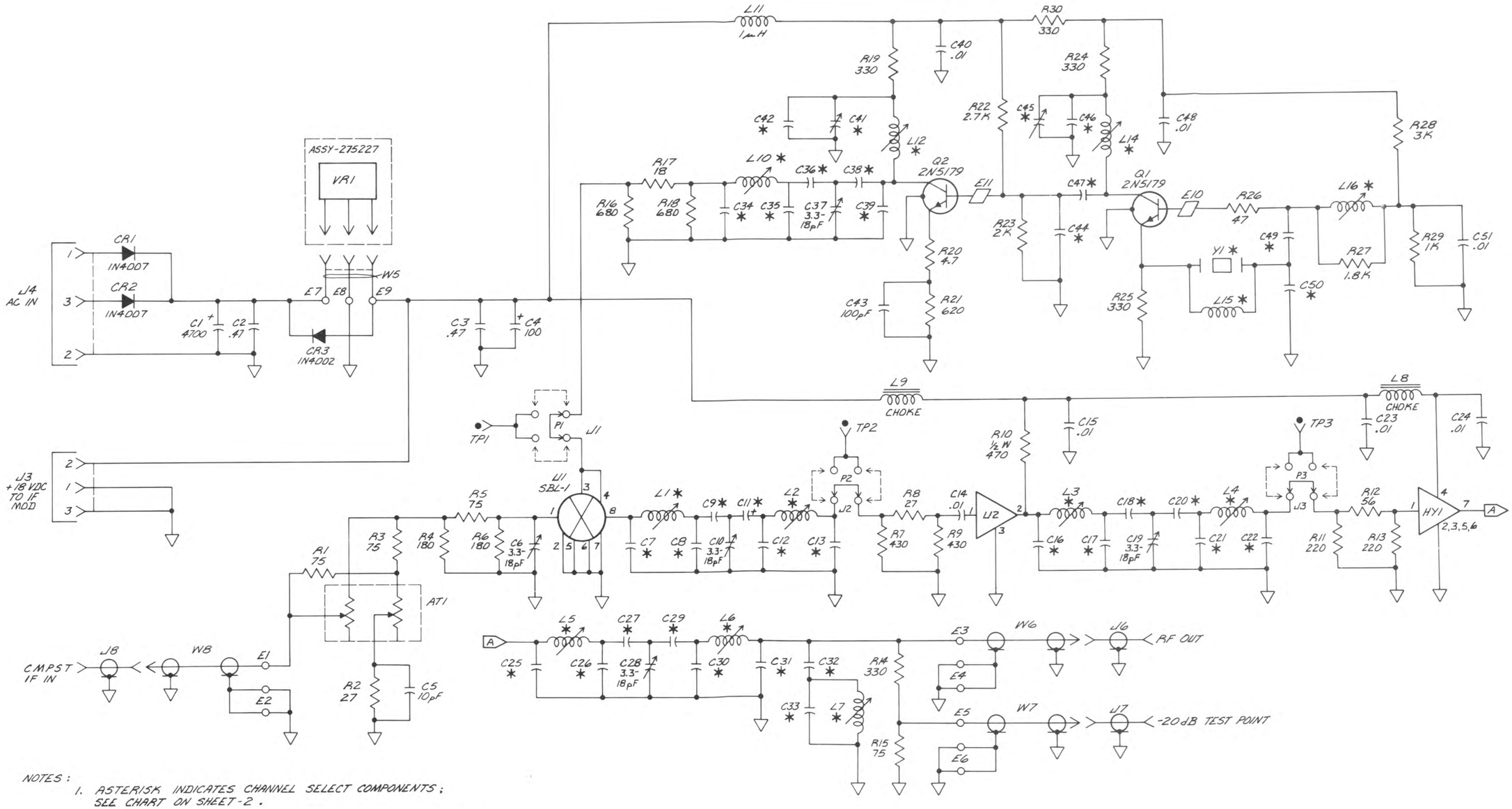
3. ITEMS 3, 5, 6 AND HY1 ARE TO BE INSTALLED AFTER WAVE SOLDERING.

4. REFERENCE DESIGNATION L13 IS NOT USED.

277440-474A

SEE SEPARATE PARTS LIST

Figure 8-8. Assembly Drawing, PWB Output Converter



NOTES:

1. ASTERISK INDICATES CHANNEL SELECT COMPONENTS; SEE CHART ON SHEET-2.
2. ALL PLUGS/JUMPERS ARE SHOWN IN NORMAL OPERATING POSITION; THE POSITIONS SHOWN WITH DASHED LINES ARE USED FOR TEST AND ALIGNMENT.
3. REFERENCE DESIGNATION L13 IS NOT USED.

277476A

Figure 8-9. Schematic Diagram, PWB Output Converter (Sheet 1 of 2)

6330 OUTPUT CONVERTER TABLE

CHANNEL	L1, L2 L3, L4 L5, L6	L7	L10	L12	L14	L15	L16	C13 C16, C22 C25, C31	C12 C17, C21 C26, C30	C9, C11 C18, C20 C27, C29	C32	C33	C34	C35	C36 C38	C39	C41	C42	C44	C45	C46	C47	C49	C50	C7	C8
2 - 4	8.5T	13.5T	5.5T	5.5T	SHORT	.33µH	4.5T	56pF	27pF	33pF	10pF	10pF	47pF	10pF	4.7pF	5.6pF	OMIT	.01µF	OMIT	OMIT	OMIT	10pF	14pF	47pF	51pF	21pF
5 - 6	8.5T	OMIT	5.5T	5.5T	SHORT	.27µH	3.5T	39pF	12pF	12pF	OMIT	OMIT	47pF	10pF	4.7pF	5.6pF	OMIT	.01µF	OMIT	OMIT	OMIT	10pF	14pF	47pF	39pF	12pF
A - F	7.5T	↑	4.5T	3.5T	3.5T	.47µH	5.5T	23pF	2.7pF	3.9pF	↑	↑	33pF	3.6pF	3.3pF	5.6pF	3.3-18pF	33pF	27pF	3.3-18pF	33pF	10pF	17pF	47pF	23pF	2.7pF
G - 1, 7 - 10	5.5T	↕	3.5T	2.5T	2.5T	.33µH	4.5T	21pF	2.4pF	3.3pF	↕	↕	25pF	3.3pF	3.3pF	5.1pF	↕	33pF	27pF	↕	33pF	10pF	14pF	43pF	21pF	2.4pF
11 - 13, J - L	4.5T	↕	2.5T	2.5T	2.5T	.27µH	3.5T	20pF	2.4pF	2.7pF	↕	↕	25pF	4.7pF	3.3pF	2.7pF	↕	24pF	18pF	↕	24pF	6.2pF	14pF	43pF	20pF	2.4pF
M - R	3.5T	↓	2.5T	1.5T	1.5T	.18µH	2.5T	19pF	2.4pF	2.7pF	↓	↓	18pF	3.3pF	2.7pF	5.1pF	↓	33pF	19pF	↓	33pF	9.1pF	17pF	51pF	19pF	2.4pF
S - W	2.5T	OMIT	1.5T	1.5T	1.5T	.18µH	2.5T	18pF	3.3pF	3.3pF	OMIT	OMIT	20pF	6.2pF	3.3pF	2.0pF	3.3-18pF	24pF	16pF	3.3-18pF	24pF	5.6pF	12pF	36pF	18pF	3.3pF

G330 OUTPUT CONVERTER CRYSTAL(Y1) SELECT TABLE					
CHANNEL	FREQ(MHZ)	SA PART NO.	CHANNEL	FREQ(MHZ)	SA PART NO.
2	101	82321	11	122.5	82328
3	107	82322	12	125.5	82330
4	113	82324	13	128.5	82331
5	123	82329	J	131.5	82560
6	129	82332	K	134.5	82561
A	83.5	82551	L	137.5	82562
B	86.5	82552	M	140.5	82563
C	89.5	82553	N	143.5	82564
D	92.5	82554	O	146.5	82565
E	95.5	82555	P	149.5	81961
F	98.5	82556	Q	152.5	81962
G	101.5	82557	R	155.5	81963
H	104.5	82558	S	158.5	87750
I	107.5	82559	T	161.5	87751
7	110.5	82328	U	164.5	87752
8	113.5	82325	V	167.5	87753
9	116.5	82326	W	170.5	87754
10	119.5	82327			

277476A

Figure 8-9. Schematic Diagram, PWB Output Converter (Sheet 2 of 2)